American Gas Association MONTHLY

Washington Rate-Making Plan

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Human Engineering in Safety

•

Kitchens Spearhead Gas Ads

•

Gas Future in Metals Field

•

Industrywide Sales Policies

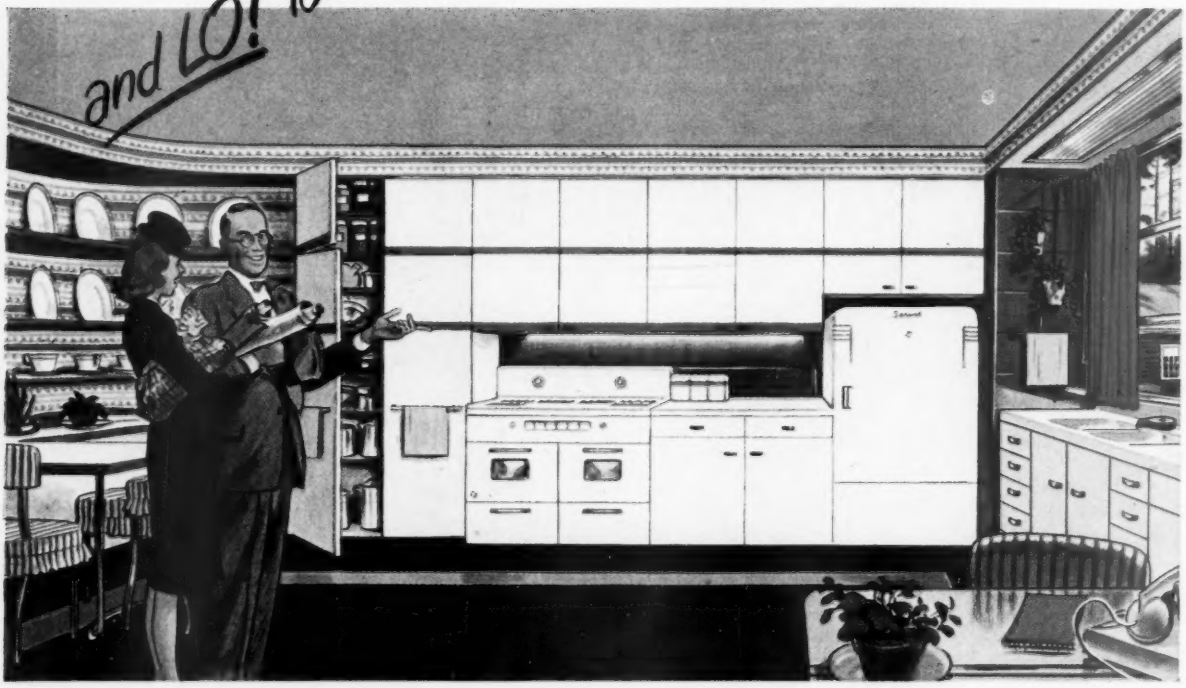
December 1944

VOLUME XXVI NUMBER 12

More than just a beautiful kitchen!
You want a *new type* kitchen. Where everything is scientifically arranged to save time and steps . . . to give you a cool, clean, comfortable place for cooking good meals.

Your Dream . . . Our Scheme . . . and LO! Tomorrow!

. . . is BIG! (The whole Gas industry is working on it!) It's a plan to bring you new freedom from wasted energy, wasted time . . . new freedom from fatigue, dirt, heat, unwanted kitchen odors. It's a plan to make your wonder workshop come to life!
Right now, we're working with kitchen cabinet makers and architects, Gas range and Gas refrigerator people, housewives and home economics experts —
So that — shortly after V-Day — we'll be able to offer you dozens of ideas on new kitchens. Yes! *direct* help in getting the one you want — for new home or old — with the least possible effort and the lowest possible cost!



a new world of ease and convenience for every woman who cooks!

It's coming soon! . . . your "New Freedom Gas Kitchen"! * When? That depends on Victory . . . your war-work and War Bonds will speed it along. But you may be sure it will be economical and trouble-free in operation. For it will be built around these essentials of a truly modern kitchen . .
A C P GAS RANGE — with new features of fast, flexible, automatic cooking. C P means "Certified Performance" — your guide to the very finest in modern cooking appliances . . .
A GAS REFRIGERATOR — silent, safe, trouble-free . . . **OCEANS OF HOT WATER** — automatically supplied by Gas for use in kitchen, baths and laundry. See your Gas company today!

cp

GAS

THE WONDER FLAME
THAT COOLS AS WELL AS HEATS

AMERICAN GAS ASSOCIATION

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American Gas Association MONTHLY

CONTENTS FOR DECEMBER 1944

By and large the gas industry is making progress in many fields despite slow going in some directions. This issue provides evidence that the industry is pushing ahead. . . . Mr. Owers plots the progress in rate-making, at least in one important and significant case. The eyes of the entire utility industry have been riveted on the unique Washington plan of automatic rate regulation which has withstood 20 years test and provided a valuable case history. Mr. Owers gives a forthright analysis. . . . National gas advertising starts a new campaign. This time it's going to revolve around eye-filling four-color illustrations of the latest in coordinated gas kitchens. Just watch those housewives' mouths water when they see them! . . . Speaking of advertising and sales, the Pacific Coast group has taken a long step forward in compiling and recommending industry-wide policies, outlined herein. While they've straddled some fences, Mr. Doerr's committee has made a notable contribution to a difficult problem. . . . New England is leading the field in tackling the house-heating problem and our own technical section is girding for an attack on the formidable gas production bottleneck. 1945 should see some interesting developments.

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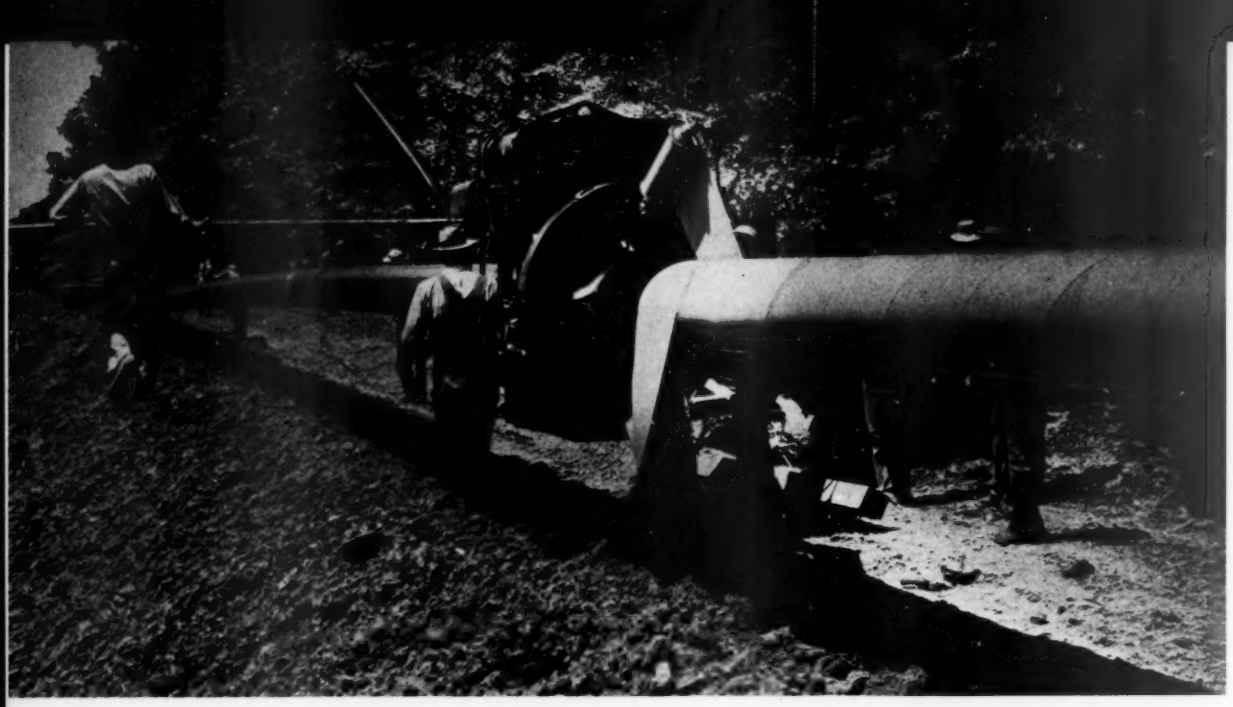
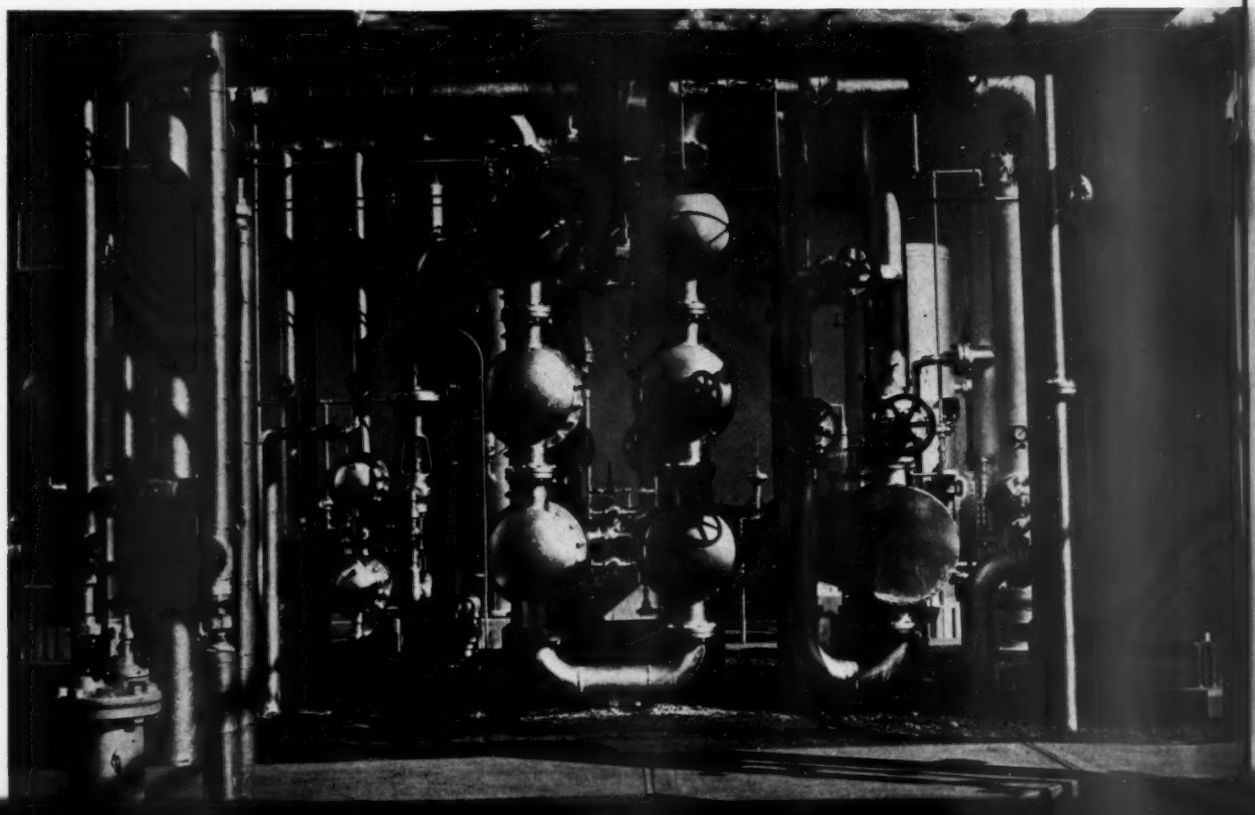


TYPICAL view of pipe wrapping machine at work on an 18-inch welded natural gas line from the vicinity of Magnolia, Arkansas, to war plants in central Arkansas. Picture was taken by J. E. Hampson of the Arkansas Louisiana Gas Company, Shreveport.

HEAT exchanger in a natural gas recycling plant of the Lone Star Gas Company. As a result of recycling operations, heavier hydrocarbons are extracted for commercial use and gas is returned to the producing horizon and stored there for future use. This photograph was snapped by A. W. Breeland, supervisor of safety for Lone Star. Both photographs shown here won $5.00 awards in the MONTHLY frontispiece contest.



American Gas Association MONTHLY

JAMES M. BEALL, *Editor*

WASHINGTON PLAN
. . . Twenty Years of Automatic Rate Regulation

By ROBERT C. OWERS

Vice-President and Treasurer, Washington Gas Light Company

THE effect of rate regulation is a matter of vital concern to all of us who are engaged in the public utility business; whether we are utility commissioners, whether we are transit company vice-presidents, or gas company salesmen, rate regulation affects our daily work. The broad powers of utility commissioners, wisely administered, can facilitate the development and successful operation of our utilities, thereby expanding our individual opportunities for service and achievement. On the other hand, unsound methods of rate regulation may jeopardize the progress of the utilities, diminish their chances for growth, and thereby imperil our individual welfare.

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The extreme effects of rate regulation may be a result of war conditions, but I believe the underlying cause for extremes may be the present state of change in the thinking of those responsible for the determination of fair rates, and the lack of well-defined standards. When the Supreme Court gave its decision in the Hope Natural Gas case early this year, it opened the door of a new era in regulation. The old rules were pretty well scrapped. Utility commissioners are encouraged to devise new methods, and no doubt many utility operators would be happy to find a reliable guide whereby they could be assured of the continued welfare of their companies. The recent adoption by the Arkansas Commission of the "prudent investment" standard may be one effect of the Hope decision. The New Jersey Rate Adjustment Plan adopted early this year may be another attempt to get on firm ground with respect to rate regulation. In view of the changing concepts of what constitutes fair and reasonable rates, automatic rate adjustment devices similar to the New Jersey Plan may be more widely considered.

In the District of Columbia, we have had twenty years' experience with an automatic type of rate regulation, generally referred to as "The Washington Plan." This procedure for the spontaneous adjustment of utility rates worked well for a good many years. However, this year—1944—has been a critical year for the Washington Plan; it has had a major operation, and there is some fear that the patient may not survive. All of the machinery of the Washington Plan has been taken apart this year; every feature of it has been examined in public hearings, and in putting the machine together again there is some question as to whether it still *is* the Washington Plan.

Our Potomac Electric Power Company friends, who have built up their fine electric business under the influence of this rate-making machine, now disown and reject the remodeled device. Possibly when their present controversy is settled there may be no Washington Plan. This does not mean, however, that there will not be other types of automatic regulation proposed from time to time. The rebuilt Washington Plan, even though shockingly changed, may still offer just that type of regulation, whereby utility rates may be spontaneously adjusted year by year to keep them within the classic definition of "fair and reasonable."

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A good many people still think that automatic adjustment of rates is sound and practical and will make for the prosperity and stability of the utility industry. On the other hand, I have heard many others say that the changes which have been made from time to time in the Washington Plan prove the impracticality of such a device. It is my purpose to tell you, in the light of our experience in the District of Columbia, how automatic regulation works and to point out some of the advantages and disadvantages of such a rate adjustment device.

Address given at Mid-Year Conference of The Maryland Utilities Association, September 22, 1944.

I.

First, let me tell you very briefly what the Washington Plan is. It provides for annual rate adjustments. The rates for the coming year are measured by the earnings for the past year. The past year's earnings, whatever they may be, unquestionably belong to the company, but if such actual earnings exceed the basic rate of return, the utility's rates are to be reduced in the following year. On the other hand, if actual earnings are less than the basic return, a rate increase is required in the following year.

Incentive to Utility

The plan offers an incentive to the utility for efficient and economical operation, since rate changes are not designed to bring the earnings all the way down, nor to lift them all the way up to the basic rate of return. For example, if the utility earns $300,000 in excess of a basic 6%, next year's rates would be reduced by one-half, only $150,000, and of course none of the $300,000 is refunded. This opportunity to earn more than the basic return is the incentive.

The elements of rate making are stipulated, including rate base, basic return and annual accruals for depreciation. The rate base is brought up to date each year by adding the net additions to plant as recorded on the company's books. It is only necessary, therefore, to determine the net operating revenues for the past year and to relate them to the rate base to ascertain whether or not a change in rates is required and also the amount of the change.

The changes which have been made in the Washington Plan have been changes in the stipulated elements—modifications of the rate of return, adjustments of the rate base, and the application of new ideas as to the determination of proper operating expenses, depreciation and taxes.

II.

I believe that most impartial observers would agree that the Washington Plan has operated successfully. First established twenty years ago for regulation of electric rates, it has produced successive annual rate reductions which have saved electric consumers $86,000,000 since 1925; meanwhile, the company's financial record seems to compare favorably with that of the electric industry in general.

For the gas utility, the plan started in 1935; again it worked well, although less spectacularly. We in the gas business have not been able to juggle such astronomical figures. Our customers have saved only $10,000,000 through rate cuts under the Washington Plan, but since it was established our gas company has managed to develop a fairly high investment credit rating.

Furthermore, under automatic rate regulation in the District of Columbia, the gas utility did receive an increase in gas rates when it was urgently needed. This was in 1942 in the critical days of the war. I believe it is the only increase in utility rates to all classes of consumers in a city of substantial size during this war era. Of course, we had to get the U. S. Supreme Court to hold off the O.P.A. before we could make this increase stick; but the higher scale of rates is still in effect and I doubt if the increase could have been obtained except through the operation of the automatic type of rate adjustment.

Another thing to remember is that the adoption of the Washington Plan for both the electric company and the gas utility had the immediate beneficial effect of ending controversy. For both the electric utility and for the gas utility the adoption of the plan was the end of long-drawn-out litigation, on valuations. Both of the plans started with a stipulated rate base representing a compromise between the commission's and the company's ideas of value.

III.

Let us then consider the changes that have been made in the Washington Plan in the twenty years since it was first established. First, changes have been made in the basic rate of return. In 1924, the rate of return permitted the electric utility was 7½%. This was reduced by successive steps to 6% in 1937, and in this year 1944, the commission has ordered a further reduction to 5½%. However, all of this year's changes in the electric company's plan have been appealed to the courts by PEPCO. For the gas company, the basic rate of return was established at 6½% in 1935 and last year the Commission ordered a reduction to 5¾%. However, on the gas company's appeal to the courts, the Commission's order was vacated.

Other changes proposed this year by the commission, which are still in controversy, cut down the rate base from the previously agreed amount to original cost less depreciation, and provide that the amount of rate adjustments should be determined after allowance for the effect of federal income taxes.

Economic Changes Reflected

These are drastic modifications of the original formula and may have a very decided effect upon the earning power of the utilities. However, it does not follow that these changes prove that the automatic rate adjustment device can no longer be effective. It seems to me that they reflect the changes in our economic situation. Twenty years ago, 7½% was nationally recognized as a reasonable rate of return for electric utilities, but no utility operator would seriously contend for such a rate today. When the Washington Plan was adopted, no one was thinking about 90% excess profits taxes. In view of the economic upheaval caused by the war, it is not surprising that rate adjustment formulas devised more than ten years ago need reconsideration.

As to the proposed change of rate base, cutting it down from the previously stipulated fair value, to the bare bones of original cost less depreciation—this is certainly a deprivation of property values which must be combated by the utility operators. However, automatic regulation did not produce this change. It is a reflection of the new theories of rate-making to which recent Supreme Court decisions have given validity. These newer ideas are sure to infect automatic devices to the same extent that they are applied in orthodox rate adjustment procedure.

If we assume then, that the constant state of change which affects

all business all of the time has not of itself made automatic rate regulation an impossibility, what are the good points of such a plan and what dangers may it involve?

It is generally assumed that automatic regulation offers an incentive to management, through provisions whereby in periods of prosperity rate reductions are limited to only a part—in the Washington Plan, generally one-half—of so called surplus earnings. The evaluation of this feature, of course, depends on anybody's own guess as to what earnings might be realized in similar times under conventional rate adjustment procedures. Anyway, it has been generally assumed that an incentive feature is one of the advantages of automatic rate regulation.

Another good point is that the rate adjustment procedure is quick and inexpensive, since all that is necessary is to relate the past year's earnings to the rate base. Not much preparation is required. In normal times the annual hearings under the Washington Plan have frequently occupied less than one day.

Ready-Made Machinery

Another feature which may be a great advantage is the readiness of the rate-making machinery. Because of its frequent use, it is well-oiled, and in operating condition. When changing economic circumstances make rate increases necessary, the mechanism to produce higher rates is already at hand. Moreover, after a series of rate adjustments brought about by the application of the formula, the utility needing a rate increase is in a favorable position. The utility is beyond reproach. It does not even have to prove its case—the mechanism, set in motion by the commission itself, automatically indicates that a rate increase is required, and then points to the precise amount of increase to be allowed.

Unquestionably, rate increases can be obtained more readily under these conditions than in a situation where the whole burden of proof is upon the utility, and where the company must develop from scratch a showing of its need for higher rates. Compare the case of the Washington Gas Light Company in 1942, merely asking for its just due, and ultimately receiving it (in part at least), with the case of the Western Kentucky Gas Company, which upon a showing of need was denied an increase, even though its return was admittedly only 1½%! Of course, if automatic regulation is to operate smoothly when rate increases are required, there must exist a spirit of fair play and integrity, such as characterized the action of the Public Utilities Commission of the District of Columbia in 1942.

Furthermore, the automatic plan has an appeal to the public and tends to maintain good public relations; even though rate reductions are small, the public feels that it is kept completely up to date with the utility at all times, and there is no accumulation of pressure for major rate reductions.

V.

These then are the good points from the utility operator's view of automatic rate adjustment. What disadvantages does it have and how can this type of regulation be evaluated?

Viewed objectively, there is not much real difference between automatic and conventional rate regulation. I believe we may be inclined to expect too much of the automatic device. Changes in the formula proposed from time to time are naturally disturbing. As we develop experience with such plans for annual rate adjustments, we may be inclined to forget how they came about. Adopted by mutual consent between the utility and the commission, they served an immediate purpose—adoption of the plan settled a controversy. That first effect was presumably advantageous to the utility operator, otherwise he could have insisted upon orthodox regulation. However, it is so often forgotten that an automatic rate adjustment device is merely a form or process of rate regulation—which has been and always will be subject to change. There is no reason to suppose that you can establish today fixed, unchangeable rules which will be used in rate adjustments twenty years hence in an automatic plan or in any other type of regulation.

It is apparent, however, and it could probably have been readily foretold, that automatic regulation works best in a period of stable economic conditions. The New Jersey Plan recognizes this fact. You cannot devise machinery of this type which will stand the upheaval of war-time economic changes without developing a few knocks. When the Washington Plan was adopted, we did not foresee the present-day high taxes, nor could we imagine the Office of Price Administration endeavoring to take over from local commissions the responsibility for rate regulation. Major changes in economics will probably bring about changes in any rate adjusting machinery.

Danger of Over-Regulation

Against the apparent advantages of automatic regulation must be weighed the danger that the constant, year-by-year examination into the utility's affairs may result in *over-regulation.* Although the procedure is essentially simple, the operation may become involved in detail after a few years. It is easy to see how commission staff members responsible for checking the figures from year to year may each try to outdo his predecessor in looking out for the public interest. Such frequent examination of a company's earnings and expenses for the purpose of adjusting rates may tend to become hypercritical, leading to accounting refinements and other modifications of procedure, in a search for the perfect balance between the consumer's and the company's respective interests. It is doubtful if the public interest would be well served by a development of this sort. The monetary effect may be small, but there is a real danger that such constant concern with the details of the company's business may bring the commission by imperceptible steps into the field of management; at the same time deadening the spirit of enterprise, initiative and independence of management by which the greatest development and highest standards of utility service can be attained.

We all agree that regulation is fundamental in our business. In the correction of improper practices, the

prevention of discrimination, and in the determination of fair rates, the regulating commissions serve a definite need, but their responsibility is not and cannot be the same as the responsibilities of utility management. Management must develop the industry. It must find the capital to make the extensions and bring utility service to all of the people. It must plan for improvement of its service to the public, and must promote new uses of utility service. This is a constructive job, and it is no reflection upon the regulating commissions to say that their activity is in the main restrictive. In the operation of an automatic rate adjustment device, the commisson should avoid unnecessary refinement of detail and the growth of practices which have an unduly restrictive effect upon a utility's freedom of action. There must be mutual confidence in the integrity of the utility management and of the commission, and each should endeavor to excel in his own field: the manager in the development of efficient and economical service of the highest standard, and the commission in the promotion of genuine public interest by allowing the utility freedom of judgment and action to permit such development.

Enterprising Spirit Needed

At the same time, a utility operator, under automatic regulation, will find that he must be particularly alert to maintain an enterprising spirit throughout his organization. The realization that whether your earnings are up or whether they are down, it will be only a few months before the rate regulating machine will level them off, may in the course of time tend to tone down some of the enthusiasm and zeal of the supervisory staff. If the rate adjustment machine were to buzz along—performing perfectly year after year, I imagine it might make us a little drowsy. Fortunately for us, in the District of Columbia there has been enough tinkering with the machine from time to time to keep us wide awake.

This danger to the vitality of independent business management, it seems to me, is one of the costs, and perhaps a particularly expensive item to pay, for the stability which automatic rate regulation may afford the utility industry. The automatic device has some decidedly good points. It is quick and inexpensive. It minimizes the area of controversy between the public and the company. It can be a definite aid in the promotion of good will. Furthermore, as a means of settling a difficult controversy, it may have a genuine strategic value. However, utility operators must be particularly alert to maintain independence of management. They must avoid the dangers of over-regulation and must avoid submission to the devitalizing influence which automatic regulation many tend to induce.

It will help utility operators to remember that an automatic rate adjustment plan is not a charter, or a bill of rights, but only a form of rate regulation. If administered fairly by the commission and employed wisely by the utility, it will work; but it is not guaranteed, and it must not be regarded as the penicillin for the cure of all rate-making ills.

Most important of all, we utility operators must avoid the defensive position, and devote our efforts to the constructive up-building of a strong, vital, and thriving business, so that the quality of the service we render to our communities will continuously outweigh all other considerations in the minds of our customers. Public opinion in America is still a tremendous force, and, with the public solidly behind us, we can continue to operate our utilities, under any fair regulation, in the same spirit of service which has enabled our industry to so successfully do its share of helping America win the war.

Survey of One Woman's Ideal Postwar Home

WRITING in the September 29 issue of *Printers' Ink*, Dorothy P. Ketter, manager of sales, Mitchellace, Inc., Portsmouth, Ohio contributes a debunking article with direct significance to the gas industry.

First, the fellow who gets the job building her postwar ideal home won't be a lot of the current advertisers, such as "the fellow who tells me in his ads I can count on the sun to provide heat for my house in winter so I won't need a furnace nor a basement to keep the furnace in." For, Miss Ketter says, "There are too many days when the sun doesn't shine here." After more observations in the same vein, she gets down to positive recommendations regarding what she *does* want. Her views on equipment are pertinent and ladled with common-sense:

"I don't care anything about a lot of fancy gadgets. I'm still capable of opening my own doors if they are built right, turning on and off the water spigots, even washing my own dishes. I do not need a lot of electric-eye-operated devices.

"But I do want a stove with stream-lined appearance, easy to keep clean and with a high oven. We like baked meals. I don't want to get down on my knees to put things in the oven, to look at them in the oven, to take them out of the oven.

"Fancy dish washers and hot-air drying chambers for dish towels leave me cold. I want a good, big double-bowl sink—and I do mean big bowls—with generous-size drain boards slanted enough so they will really drain, and made of metal. I've had enough of warping wooden kitchen equipment, fond as I am of wood for the rest of the house. And I want a strainer that will really keep small food particles from going down the drain but that will come out easily for thorough cleaning.

"I have no desire for transparent refrigerators, with swinging shelves and such. I'll settle for a good, big, roomy electric box that does not have that blind alley in the back of the freezing unit where a big hunk of ice forms that I can't get at and that takes hours longer to dislodge than are needed to defrost all the rest of the unit."

West Virginia Deep Well Records

PAUL H. PRICE, West Virginia State geologist, has announced publication of Volume XVI, "Summarized Deep-Well Records in West Virginia" by R. C. Tucker, assistant state geologist. This report contains a summarized record of 1350 wells in West Virginia and 250 in bordering states, all of which penetrated to the top of the Onondaga Lime or deeper.

Accompanying the report are two maps, one showing the location of all such wells on the Charleston, Kenna and Ripley quadrangles, and the other showing such wells for the entire state.

This report and maps represent not only another important contribution to knowledge of oil and gas prospecting in West Virginia but furnishes a most important and reliable guide for future deep drilling.

Action in Safety ... *Importance of Human Engineering in Reducing Accidents*

George J. Ruoff

By GEORGE J. RUOFF

Chairman, Accident Prevention Committee, American Gas Association

THE safety problems of the gas industry are substantially the same as other industries but with special emphasis on the characteristic potential hazards of asphyxiation, fires and explosions.

Our committee is undertaking a study of these problems to determine where our chief hazards are located so that remedial measures can be applied first where the greatest benefits will accrue. This is a realistic, commonsense approach.

Let us examine the progress of safety performance during the past decade or so.

Progress in Safety Performance

In the gas industry remarkable improvement was made from 1929 to 1933. Since then, each year the accident curve has generally flattened out. I believe it is quite significant that this is precisely the same situation that has been experienced by the electric industry over the same period of time.

I believe there is an answer to this and that this answer will indicate the steps to be taken if further progress is to continue from the point where it left off in 1933.

All of us probably will agree that we are and have been for some time, in possession of the "know-how" of this safety business as applying to our industry. We know that first of all, we must start off with top management's genuine, continuous concern and determination to eliminate the causes of accidents.

We all are familiar with H. W. Heinrich's probability ratio of 330/300/29/1—that is—for every set of 330 accidents there is one serious or fatal injury, 29 minor injuries, but *300 accidents which are injury-free*, near misses; this is the challenge to our resourcefulness to take "the stitch in time to save nine"; or as the film of the Michigan Bell Telephone Company of Detroit, Michigan, brings out, the opportunity to "Ring Down the Curtain" on situations where repeated warnings occur.

We also know that we must carefully select our employees to eliminate the square pegs in round holes and round pegs in square holes—both misfits. We know that certain individuals have greater aptitudes for success at certain types of jobs. It is basic and fundamental that all individuals are just naturally masters at certain tasks; average at some; and downright failures at others. So, if a man is at the wrong job, don't blame him, because he is there through conditions beyond his control.

Foremen—Arm of Management

We know that the next step is appropriate and continuous job training. Finally, we come to the most important of all; we know that we must furnish to the workers adequate and thoroughly trained supervision to follow through the job. This means *foremen* (The Arm of Management), provided with job knowledge, leadership, and training ability to see to it that management policy in all its ramifications is followed through to the letter by the workers under their supervision.

Sounds quite simple, doesn't it? Well then, why the flattening out of the public utility industry (gas *and* electric) accident curve since 1933? Is there a fly in the ointment? What has upset the applecart? I believe the answer is that most of us have ignored or forgotten about the most important part of the entire job, *"Human Engineering."* You know, the thing that is so basic and fundamental that it never changes; the same today as it was a hundred years ago; and will be the same a hundred years hence. It's the wise use of the knowledge of the forces which control, direct and influence human action and reaction.

All big companies were once small companies. The larger the small companies became, the better organizational "set-ups" became possible. More money became available and as a result, the greater were the improvements in methods, tools and equipment. Great strides were also made in training.

"Boring From Within"

We all are familiar with the job training most utilities accomplished in the late twenties and early thirties. We really "went to town" in doing a bigger and better job. We succeeded in producing better employees and at the same time provided the public with better and cheaper service. Public Relations, Safety, Job Training, all became the "theme of the day."

Now comes what I believe is the answer to the flattening out of the utility accident curve. Since 1933 utility management has been confronted with a series of complicated problems and difficult economic situations for which few if any precedents have occurred to provide even a remote sense of guidance. First came the prolonged economic depression; then increased regulation; then government competition; yard sticks; overlapping, jurisdictional control; labor problems, etc.

All the while, human nature was *"boring from within"!*

Management became harassed on all sides, becoming fearful of its very ex-

Presented at Public Utilities Session, National Safety Council, Chicago, October 5, 1944.

istence. In short, it went *"defensive."* Then, to cap the climax, came the war! Being regulated, we in the gas business (electric also), were caught downstream without even so much as a paddle. We were stymied by fixed rates for our services, but had to pay higher prices for materials and labor. Then came shortages, more controls, security and property protection problems; but why go on? I'll have you and myself in tears! Did you ever try to sell anybody anything when that person was on the defensive? You know you have! And you know you *failed* because of human reaction. As a poet has put it, "A man convinced against his will, is of the same opinion still."

When the "heat's on" it's only human to do *first,* the things exerting the greatest pressure.

Let's consider our future course of action.

I believe we ought to realize more fully that everybody has his own problems, personal and company, and accordingly execute our jobs more carefully, taking into account to a greater degree, the *other* fellow's point of view. The foreman in the gas works or in the gas street gang doesn't want to experience accidents; or to see his men get hurt. Neither do the men themselves want accidents or injuries because an accident, after all, is *"anything that goes wrong."* It's something that actually embarrasses everybody involved.

Let's not sit at our desks and issue reams of rules, instructions, reports, etc.; send them to the foreman or men, and expect them to "carry the ball," for us. Cut the items to one page only. Use sketches, utilize pictures. If you can "sugar coat" these with humor so much the better. Don't kid yourself by feeding them more than can be digested. Let us benefit by the marvelous help the war contractors of our country have obtained from the Government's Training Within Industry programs of:—"Job Instructor Training," "Job Relations Training" and "Job Methods Training." These programs are fundamental—they recognize *human engineering!* They are *not* new! Most of us present have heard about the make-up of these "package" training courses ten to fifteen years ago.

Let's not, "get into anyone's hair," but sell the idea especially to supervisors that it's not so much *what* they say or do as it is *the way* they say or do it that counts. As one worker once confided in me: "I realize that the foreman has a job to do, but why treat the boys like dogs? It's goggles, not muzzles, men wear."

A decent regard for human personality not only should constrain one to simple courtesy; but *effective supervision demands it!* It has been said that "Harsh counsels are like hammers that are always repulsed by the anvil of resentment; whereas, *civility* costs *nothing* and buys *everything."* Yet, how many times have you heard foremen say the offensive, mortifying thing at the worst possible time, with the result that all respect for them by the workers was hopelessly lost. Mutual confidence and respect are the links of the chain that bind an organization together, especially in stormy times!

Get "Team Action"

Let's approach this problem realistically. All of us for years have had to contend with square pegs in round holes and round pegs in square holes. After the war, this will be multiplied. This is our opportunity, *yes, our job,* to help supervision to get "team action."

Let me remind you that there are still many very small gas companies. Of 404 companies listed in A. G. A. Statistical Bulletin No. 54 covering the year *1943* there are only 27 companies employing *over a thousand employees.* There are also only 84 companies employing between 125 and 999 employees. *But,* there are *294* companies employing less than 124 employees. These 294 companies furnish a very fertile field for *real* improvement. Here the need is greatest! If the truth were known, I believe a very small percentage of first line supervision of these 294 companies partake of the "fountain of knowledge" provided by this convention in Chicago and others like it elsewhere. They

Near-Serious Accident

—United Gas Log.

Hydrostatic test was being put on a section of pipe at the machine shop. Pressure was brought up to 2800 pounds, an employee was standing about 2½ feet from pipe waiting for the pressure to be released when the flat end of the testing cap gave way, causing the end of the cap to be thrown off with considerable force; part of the cap struck the employee a glancing blow on side of head. Later investigation showed that wrong kind of testing cap was used, and in the future an orange peel bull plug made to screw in 7" coupling will be used in making these tests

just don't know about the many studies, reports and articles published by the American Gas Association, the Edison Electric Institute and the National Safety Council. And if they did, many of them undoubtedly would not find the time to read them.

Let's concentrate on giving the supervisors of this group the "know how" in *condensed, workable,* form.

Let me conclude with the title of a well-known radio and movie song: "*You* can be *better* than you are—you could be swinging on a star."

Combustion Gas Turbine and Its Relation to the Gas Industry*

By C. H. M. Burnham

Panhandle Eastern Pipe Line Company, Kansas City, Mo.

APPARENTLY there is no dearth of literature on the development of the gas turbine to its present state of perfection. Those who are interested in the efficiencies developed by this new type of prime mover need only to refer to the many publications of several manufacturers, notably Allis-Chalmers Manufacturing Co., General Electric Co., and Westinghouse Electric & Manufacturing Co., which companies, in addition to others, are now engaged in extensive research programs based on the combustion turbine. Suffice it to say all indications point to the fact that the combustion gas turbine is here to stay. The postwar period will bring further improvements with the result that the present generation very likely will see it widely used.

Gas and Oil Share Market

It is merely the purpose of this report to point out those applications of the combustion gas turbine which may prove of interest, as well as possible benefit to the gas industry. The first matter of interest to the gas industry is the fact that combustion turbines, generally speaking, can utilize as fuel only gas or the better grades of fuel oil. Considerable research work is being done to give good gas turbine performance on lower grades of fuel oil and even on coal. However, it is quite likely that developments in this direction, particularly the use of coal, will meet considerable difficulty. Accordingly, gas and oil will share this market and for obvious reasons, oil and its derivatives will enjoy a monopoly in all installations of gas turbines used to propel ships, locomotives, and airplanes. Gas, on the other hand, doubtless will be in demand as a competitor of fuel oil in stationary applications. In this connection it is to be remembered that the fuel must be supplied to the gas turbine under relatively high pressures (50 to 75 pounds) and unless gas is available at this or high pressures, compressors will be required.

The second application of the combustion gas turbine, which holds interest for the gas industry, is not as a possible sales outlet but as a source of power, possessing under certain conditions higher thermal efficiencies than the gas engines now used in gas compressor stations. Coincidental with the development of the gas turbine has been the improvement and wider use of the multi-bladed axial compressor. Such compressors, as well as the centrifugal types now already thoroughly proved, will probably find wide application as gas compressors direct connected to gas turbines.

A third application of the principle of the combustion gas turbine, although not having great bearing on the gas industry, has to do with the possible use of the turbo super-charger on gas engine power installations. There are already numerous installations of the turbo super-chargers on diesel engines in which it is claimed that the power may be increased as much as 50% without additional weight. Installations on gas engines no doubt will follow, thus broadening the field for this type of equipment.

To summarize briefly, it behooves the gas industry to keep abreast of the developments which inevitably will be made in improving today's power generating practices. The art of building better prime movers such as the combustion gas turbine has received tremendous impetus as a result of war developments and the gas industry is in a position to share in this program. Consideration should be given to cooperating with the builders of combusion gas turbines to the end that gas will be used for fuel in some of the early commercial installations. Individual members of the gas industry might also be interested in carrying forward their own research programs.

* Report to Natural Gas Department Managing Committee.

Germany Speaks

Vas is los
It cannot be—
Someone is
Invading ME!
Sotch an act
Is most unsoundt;
It's der odder
Way aroundt.
Ach du lieber!
Don't dose fools
Know dot it's
Against der rules?

American Enka Corp., Voice Enka, N. C.

Gas Appliances in the Movies

SOME RECENT—SOME NOT SO NEW

Setting from R.K.O. picture "Come Share My Room," featuring Leon Errol, Richard Lane, Clarence Kolb and Lydia Billbrook

Polly Patterson in Pete Smith's "Home Maid," an M.G.M. Studio production

Judy Clark and Roger Pryor in "Kid Sister," Producers Releasing Corporation

Paulette Goddard and Fred MacMurray in the Paramount feature "Standing Room Only"

Smart New Gas Ads... *Featuring Postwar Gas Kitchens To Spearhead New Campaign*

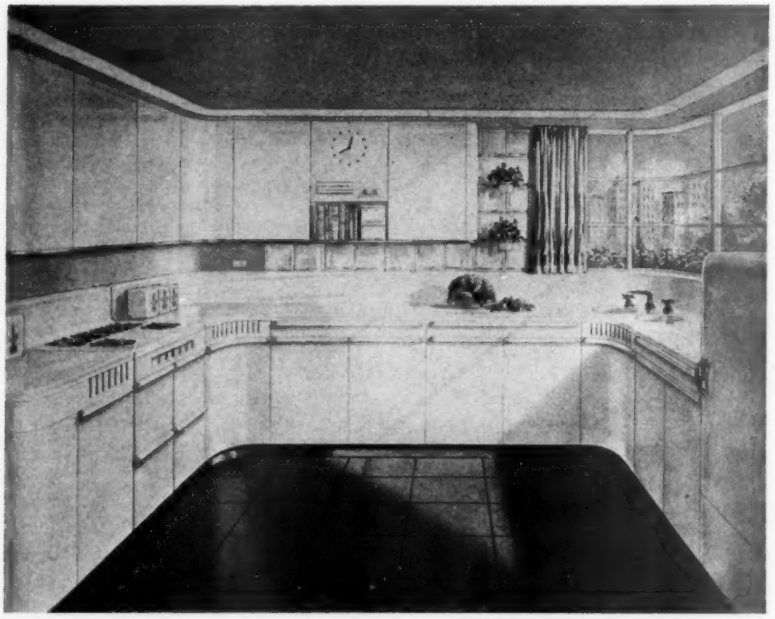
STARTING in January 1945 and continuing for the next six months, the American Gas Association's Committee on National Advertising will sponsor a new series of consumer advertisements developed in accordance with recommendations of the Postwar Planning Committee.

Specifically, the new advertising program will consist of two closely integrated campaigns. One will feature the latest developments and trends in the fast-developing art of kitchen planning. In this series the spotlight will be trained on the three essentials of a strictly modern postwar kitchen—a Certified Performance gas range, a gas refrigerator and ample hot water automatically supplied by gas heat. Insertions will occupy full pages, some in color and some in black and white.

The second campaign is specially designed to give separate featuring and stronger promotion to gas house heating and year-round air conditioning than is possible in the kitchen series. Half pages in black and white will be used. With one campaign supplementing the other, all five domestic utilizations of gas fuel will be given a strong play.

The decision to depart from the current series of two-color, full-page advertisements featuring "the house that gas runs" (a program, by the way, which enjoys high identification and readership ratings) came as the result of several weeks given over to an intensive study and analysis of various advertising themes, their timing and their promotional possibilities, together with increasing gas industry sentiment for the package-planned or coordinated gas kitchen.

It remained, however, for the Postwar Planning Committee to point the way. Two of its thirty-one recommendations constituted a special plea for the inauguration of the new advertising program, namely, "Advertising must concentrate on the use of gas in the kitchen" and "Support should be given to the recently announced coordinated gas kitchen equipment program."



Kitchens such as are shown on these pages are being considered for future four-color national gas advertisements

←This type of half-page "editorial" ad will supplement full-color ads such as that shown on the inside front cover

Investigation also developed the fact that beautiful, glamorous gas kitchens are in growing demand among the women of America. Furthermore, it was agreed that the gas industry has a superior cooking appliance which, when properly installed, can excel all others in support of the "clean, cool, odorless kitchen."

With this background information at its disposal, the Subcommittee on Approval of Domestic Gas Copy met at Cleveland, September 20 and 21, and went thoroughly into every phase of the coordinated gas kitchen project as well as related activities. Reports were received from both technical and promotional experts and from chairmen of several special committees on the status of technical development of the ventilated kitchen, the coordinated kitchen without the ventilating feature and other pertinent matters.

With all the "evidence" in, the committee spent the second day in executive session studying and analyzing four separate advertising campaigns presented by the agency, McCann-Erickson, Inc., of New York.

Coordinated Kitchen Theme

These four campaigns demonstrated the several ways in which either the coordinated gas kitchen, the ventilated gas kitchen, Certified Performance gas ranges or gas industry institutional objectives could be handled effectively in national advertising.

After discussing each campaign the committee was of the opinion that, since the coordinated gas kitchen project has reached an advanced stage of development and its promotion is an established commitment of the gas utility industry, the bulk of the national advertising scheduled for the first six months of 1945 should carry this story to the American public.

It was also felt that in addition to the enthusiastic reception given to the coordinated gas kitchen idea by a majority of gas utility companies, gas appliance manufacturers, makers of kitchen cabinets and other related items, there is a mounting flood of evidence that millions of Americans regard the kitchen as the most important room in their postwar new building and remodeling plans.

A colorful, livable all-gas kitchen

Into this enormous receptive and ready-made market, the new national advertising program is being launched, in January, with the initial insertion appearing in magazines having a total circulation in excess of 18,500,000 copies.*

Announcement of a publication schedule for ensuing months awaits the completion of negotiations now under way with publishers. Plans are being made to run a series of full-page advertisements in "What's New in Home Economics," each advertisement to feature a large illustration of the kitchen shown in the national ads, together with a detailed explanation of all of the various features and innovations which are of special interest in the light of today's developments in kitchen planning.

It is contemplated that enlarged re-

Modern kitchen arrangement with strong decorative appeal

* See schedule of advertisements on next page.

Issue		*Appearance Date*
January 20th	Saturday Evening Post	January 17th
January	Woman's Home Companion	December 19th
January	House & Garden	December 20th
February	Ladies' Home Journal	January 29th
February	House Beautiful	January 20th
February	True Story	January 15th
February	Parents Magazine	January 20th
February 12th	Life	February 9th

productions of the kitchen illustrations with accompanying factual explanations will be offered to teachers for classroom use. It is also thought likely that gas companies will find these enlarged reproductions of value in answering questions of customers relating to trends in kitchen modernization.

A full schedule of advertising will also run in Architectural Forum and American Builder & Building Age, commencing with the February 1945 issues of those magazines. This advertising, at least in its early stages, will announce the availability of the Association's "Architects Manual of Modern Gas Service" and will contain basic material from that manual. At the same time there will be some coordination in the copy treatment with the main themes of the kitchen advertisements.

New Freedom Gas Kitchens

As will be noted from the reproduction of the first advertisement which appears on the inside front cover of this issue, the interest of women in planning new kitchens matches that of the gas utility industry in helping them get a New Freedom gas kitchen of their hearts' desire. Announcement of the "New Freedom Gas Kitchen" as the prize-winner in an inter-industry contest to name the postwar coordinated gas kitchen was made in the last issue of the MONTHLY.

Care has been taken in the preparation of this initial advertisement not to promise too much too early. For example,

"Right now, we're working with kitchen cabinet makers and architects, gas range and gas refrigerator people, housewives and home economics experts—

"So that—shortly after V-Day—we'll be able to offer you dozens of ideas on new kitchens. Yes! direct help in getting the one you want—for new home or old—with the least possible effort and the lowest possible cost!"

Again, farther on in the text, the New Freedom gas kitchen is not promised until after Victory when Mrs. America can have her Certified Performance gas range, her new silent gas refrigerator and her new gas water heater.

The other campaign, consisting of half-pages in black and white, has unique characteristics of considerable selling power. These ads, which cover all five uses of gas, are in the form of a personal column of advice on the home—chummy chats to women, discussing homemaking problems and the ways gas can help solve them. The column will be signed "Margaret Mallaby, American Gas Association Reporter."

This innovation in advertising technique will tell interesting and convincing facts about the many advantages of gas as well as developments in gas appliances to women in language women like—the intimate, editorial style of a woman writer. They begin with: January Better Homes & Gardens and February American Home and Woman's Home Companion. Circulation of these three magazines is 8,430,716.

To answer inquiries created by the national advertising and to back up the A. G. A. national story, it is realized that a booklet is needed as a highly necessary step in a complete campaign of this nature. Preparations are now being made for the production of such a booklet which will incorporate colored illustrations of a number of strictly modern gas kitchens, with text containing helpful suggestions on the planning of new kitchens.

Obviously it will take considerable time before a booklet of the nature desired can be printed and distributed. In the meantime, therefore, it has been suggested that some of the manufacturers of kitchen cabinets might have material available which would serve the purpose of answering inquiries received from persons who read the national advertisements. It has been suggested that the gas utilities be provided with quantity lots of such literature by the cabinet manufacturers, but final arrangement has yet to be made.

As has been the practice of the Committee on National Advertising ever since the start of the national advertising movement nine years ago, local gas utilities will be offered newspaper mats of the advertisements. In the new campaign these will consist of reproductions of kitchen advertisements. As the new program develops, it is quite possible that other effective local tie-in features will be offered.

*THEME WITH VARIATIONS**

THE BEATEN PATH, OR THE PATH OF THE BEATEN?

No road ever made its own rut.

Ruts are made by slowly-moving vehicles along one path. Five, ten, fifteen times the path is followed. Then the rut is there. Then it *must* be followed, or a new road must be taken.

Mental ruts can be avoided by the opposition of minds. The impatience of youth must battle sober experience. Creative mind must shake off the fetters of habit and custom. Inspiration must vanquish stagnation.

Thus ruts are avoided. Thus soundly audacious plans are laid. Thus new paths are found for thought, the hoped-for becomes probable, and the undreamed-of possible.

In advertising, the blazed trail is not necessarily the best way out, and the beaten path often becomes the path of the beaten. . . . .

A treadmill on which budgets wear themselves thin, going no place.

Ralph deCastro.

* *Printer's Ink*, Oct. 13, 1944.

Well Drilling Program

PETROLEUM Administrator for War Harold L. Ickes recently recommended that a minimum of 27,000 oil and gas wells be drilled in 1945, of which 5,000 should be exploratory wells.

The 1945 program calls for 3,000 more wells than were scheduled for 1944, and while it would be desirable to drill an even greater number to meet the extraordinary requirements for crude oil, Administrator Ickes explained, it is thought this would be impossible in the face of continuing manpower, materials and facility shortages. At least 27,000 wells will be necessary to ease the strain upon the productive capacities of the nation's oil fields.

Gas Future in Metals . . . *What the Industry Has Learned in New Applications*

• This paper was presented at the recent Industrial Gas Breakfast sponsored by the A. G. A. Industrial and Commercial Gas Section during the National Metal Congress in Cleveland. It was Mr. Heyn's contribution to a symposium on "What We Have Learned This Year in Applying Industrial Gas in the Metals Field."

By H. M. HEYN

Surface Combustion, Toledo, Ohio

ONE year ago, speaking on the subject "As Manufacturers See Industrial Gas Equipment in the Future," I briefly mentioned a few developments that, as a manufacturer, we felt would create a demand for industrial equipment and a gas market in the future. They were:

1. Atmosphere Gas Quenching
2. Carbon Balance as Applied to Carburizing
3. Carbon Balance as Applied to Skin Recovery
4. Gas Pickling
5. Atmosphere Forging

Today, in reporting on the general and broad subject "What We Have Learned This Year in Applying Industrial Gas in the Metals Field," I will cover the progress that has been made in these developments, and add one or two more that have had considerable thought during the past year, and that offer similar potentials.

Atmosphere gas quenching and gas pickling have received a great deal of comment during this past year—both through the Gas Association and through the various engineering societies. About the only addition I can make to what has been published is that the prediction made a year ago—that these two developments offered a potential in the sale of gas and equipment—has been verified.

Advances in Steel Applications

Several additional installations have been made in the steel tube industry, using the principle of atmosphere gas quenching of welded tubing made from SAE X-4130 and NE 8630 steel, with very gratifying results.

While no additional installations have been made in using the principle of gas pickling, a pilot plant was constructed in Toledo and test runs were made for most major steel strip companies. The results were good as shown by samples of steel that has been gas pickled, annealed, and zinc-coated in one continuous production line. An outstanding result has been the tight adherence of the zinc coating to the steel base. Truly a credit to gas!

We have learned much about the chemistry of gases as applied to gas carburizing, and carbon balance as applied to skin recovery. We have found that carbon potentials can be computed. By "carbon potentials" I mean the combination of gases and the quantity of these gases necessary for good gas carburizing and an absolute requirement for skin recovery of decarburized materials.

In our practical studies we were handicapped in not having a ready means of obtaining the dew point or moisture content of the prepared gases. It was necessary to make a gas analysis each time and, while satisfactory, it required time—and when you are in trouble, time is the one thing you can least afford.

This brings about the announcement of a new device, the Automatic Dew Point Recorder—a machine that, every three minutes, automatically takes a sample of gas and determines its moisture content, recording the same on a chart. I cannot overemphasize what this device means, indirectly to the gas industry. True, it does not burn gas; but it makes the use of gas, as a base gas for prepared atmospheres, more foolproof. We must keep on trying to make the machines used in the prepa-

Bright gas quenching zone of roller hearth, radiant tube heated furnace used for bright annealing and normalizing of aircraft tubing

Continuous pusher type muffle furnace used for carbon skin recovery treatment

Automatic dewpoint recorder

ration of prepared atmospheres more foolproof. In doing so, gas will be more extensively employed.

While some thirty additional large continuous gas carburizing furnaces were installed during the last year, only two installations have been made using the process of Carbon Balance As Applied to Skin Recovery. What we have learned from these two installations, however, confirms our belief that postwar will see this process used very extensively. Specifications from the users of steel will become more rigid. That means that steel will be purchased without decarburized surfaces; and where the parts are decarburized in process, specification will call for the elimination of this decarburized area by means of the Skin Recovery process.

Atmosphere forging has gone ahead. At least ten large forging furnaces of the continuous type, employing a controlled atmosphere, are in use. Ten more are being constructed. These twenty units will heat to a forging temperature better than twenty tons of steel each hour. Possibly there is nothing more fascinating than seeing steel being formed or forged without oxide. The temperature to which the material is heated is in excess of 2000° F. The atmosphere is NX, or nitrogen prepared from gas. True, this form of forging adds a few dollars to the forging costs, but from the cost figures we have been able to accumulate, we know it will be justified.

There is evidence that these developments, all of which have come through research in the science of gas chemistry and heat treating, will bring about improved metal working and producing practices, through the utilization of gas, for the future.

Gas Squads Repair Flying Bomb Damage

OPENING a fuel economy exhibition at Briston recently, Major Lloyd George, Minister of Fuel and Power, paid a warm tribute to the repair squads in London of the gas and electricity authorities. They had done "a gigantic job amazingly well during the flying bomb attacks," and the Minister revealed for the first time something of the difficulties with which these two industries had been faced.

No fewer than 750 gas mains were affected, as well as one or two gas holders. One of these was the famous one opposite the Oval at Kennington. "Some boroughs had stoppages, but for remarkably short spaces of time," said Major Lloyd George. Part of the trouble was that water mains burst and the water flooded into the gas mains. No praise can be too high for those who did the repairs in such quick time.

Oklahoma Natural Plans Postwar Expansion

PLANS of the Oklahoma Natural Gas Company for a new construction and improvement program for next year involving the expenditure of more than $1,500,000 have been announced by Joseph Bowes, president of the company.

Mr. Bowes said the projects will be undertaken not only to meet present requirements but also in anticipation of Oklahoma's growth and development in the postwar era.

The program includes $354,000 for drilling equipment and equipping new gas wells and the installation of additional equipment for existing wells. Transmission lines to reach new gas supplies, additional compressor stations, replacements of obsolete lines and installations, and other transmission construction for improvement of service will total $566,000. Distribution construction and improvements call for an expenditure of $531,000, while general construction projects will cost $100,000.

Gas Display at Metals Exposition

Modernistic display of Selas Corporation of America at the National Metal Congress and Exposition held in Cleveland in October. This was a full working display of high-speed, direct industrial gas heating. Among the operating exhibits shown in the foreground is one which automatically hardens 2,000 ball peen hammers per day. The over-all display was highly colorful and attracted a large percentage of the 40,000 metal show attendants

Home Service in War . . . *How Oklahoma Natural Helps Its Homemakers*

• Paper which won first prize in the 1944 McCall's Magazine Home Service Contest. Announcement of the award to Miss Clark was made October 5 at the A. G. A. Annual Meeting in New York. Miss Clark also won second prize in the 1943 contest. She is a member of the A. G. A. Home Service Committee and is home service editor of *Southern Gas Progress.*

By MILDRED R. CLARK

Home Service Supervisor, Oklahoma Natural Gas Co., Tulsa, Okla.

Mildred Clark

OKLAHOMA Natural Gas Company serves a total of 171,989 residential consumers in 132 communities, large and small, scattered all over the State of Oklahoma. For purposes of organization in all phases of operation, our company is divided into eight operating districts. These district offices are maintained in eight of Oklahoma's larger communities. Our home service directors are located in each of these district offices; one girl serving in all but two of the districts. These are our metropolitan offices and three and four girls respectively are located in these two offices. Each home service director is responsible for all of the activities in the district to which she is assigned. The number of towns for each girl is from five to eleven, depending upon geographical location and area served.

In four of our district offices, we maintain model kitchens and club rooms which are made available to the public for meetings, lectures and parties. All facilities needed by the hostess are provided by the company. In our other district offices, model modern kitchens are maintained on the sales or office floors.

Part I

THE PROGRAM PLAN

Program plans for our district activities are set up on a quarterly basis at a meeting of our entire home service staff. Discussions of needs and objectives are held with district managers and sales managers prior to the meeting.

Since all members of our staff are graduates from many of the Mid-Western Universities, their training and background offers varied approaches to homemaking problems, thus better enabling them to determine program activity needs and procedures. Wartime conditions have not altered the objective of our department, which has always been to maintain a service on all phases of homemaking for our consumers and to do promotional activities for dealers in gas equipment, since legislation in Oklahoma prohibits utilities from selling same, and third, the building of company good will through tangible efforts offered in connection with many phases of company operation.

In anticipating our year of wartime activities, it was determined that our first need was to the consumer during the food preservation season in the summer months and secondly, our own preparation for the increased needs and demands of consumers for assistance with many and new household tasks, as well as information on the care and use of equipment. Thirdly, a program projected along postwar planning in which services offered today would be steps for tomorrow's acceptance of "gas, the modern fuel." This latter objective included plans for continuous building of good will through educational efforts in connection with the foods and nutrition program, distribution of printed consumer materials, laboratory testing methods in our model kitchens and demonstrations and participation in community and county wartime activities.

It has been our firm intention to maintain our personnel requirements at all costs though this has at times been difficult. It was the belief of the management of our company that if ever Home Service had valuable duties to perform, they were more vital during these wartime days.

Part II

THE ACTIVITY

The activity mediums chosen for the accomplishing of these objectives divide themselves quite logically into three divisions. First, a program for the homemakers of tomorrow, i.e. students in our junior and senior high schools and the colleges; secondly, a program for homemakers which included helpful ideas for homemaking assistance, education in connection with the nutrition program in cooperation with City and County Nutrition Committees and the American Red Cross, demonstrations designed to meet the needs of the day and printed materials designed to present helpful ideas in food preparation, care and use of equipment, interpretation of regulations in connection with the administration of the food program and other wartime needs. Thirdly, continuation of certain phases of activities in behalf of the gas appliance dealers in the form of home calls made via telephone and direct mail and in instances where essential, personal calls into the home.

Believing that the offering of a good service program is the best medium through which goodwill can be established and built, no particular activities were set up and designated as such, other than the time required by our directors for participation in such community activities as nutrition committees, consumer education groups, American Association of University Women, and business and professional groups.

Part III

PROGRESS IN ACCOMPLISHMENT

A. Program for Juniors

It is our present belief that too much emphasis cannot be placed upon programs for juniors who will be our future homemakers. For a number of years, we have offered the public school's Home Economics Department educational programs to keep them informed about our business and more specifically about what was new in equipment for the home. Because of our efforts to keep the program free of commercial promotion, school authorities have continued to be most cooperative in accepting the projected programs which we have offered. In many instances, they have been so pleased with our programs that they have requested the presentation as an entire school assembly program, which perhaps is

DO I PLANT BEANS?
HOW ABOUT STRAWBERRIES?
WHAT AND HOW MUCH SHOULD I PLANT?
DEEP DO 'ANT TATOES?
CULTIVATION AND CARE?
You'll Find the Answers at Our
VICTORY GARDEN INFORMATION CENTER
Victory gardening is fun when you know the answers! Don't be stumped by problems of what and how much to plant . . . how to care for and cultivate vegetables . . . how to use insecticides, and how to protect gardens from rabbits and other rodents. Our Victory Garden authority will be glad to give you information that will help make your Victory Garden a success. The food you grow in your own back yard plays an important role in winning this war. Oklahoma Natural is eager to be of service to you in helping to solve your Victory Garden problems.
Look for this booth in the Oklahoma Natural Lobby. It's your Victory Garden Information Center.
THIS IS ANOTHER SERVICE OF THE
OKLAHOMA NATURAL
Gas Company
GROW MORE IN '44

the best endorsement of the type and character of the program.

This year's program was designated as "Gremlins in the Kitchen." Drama was introduced by the use of three cut-out gremlins, designated as "Hasty, Wasty and Sly," all of whom were at work in the average home attempting to tear down wise homemaking procedures or cause equipment to wear out if proper instructions were not followed and if proper heed to nutritional standards were not adhered to. This afforded us an opportunity to make actual use of the existing equipment in the laboratories and most impressively focused attention on the need for improved equipment in the majority of the school laboratories.

The program began with the entrance of the home service director carrying two market baskets filled with a choice of foods chosen according to the Basic Seven Nutrition Standards. This was done to show available supplies and alternates which could be effectively used in maintaining these standards. In order to explain the food constituents, clever drawings placed on three inch square cardboards were attached to each of the foods for the purpose of emphasis in telling the nutrition story. Foods were taken from the market basket and prepared so that an entire meal could be assembled. During the cooking procedure program, pertinent information was given on care and use of equipment.

Instructors Indorse Program

Programs of this variety frequently required as many as four or five such demonstrations in one day's time. The program was given to both white and colored schools. The enthusiastic endorsement of home economics instructors was our best indication of the value of this program. Frequently following the first presentation, instructors would ask students to invite their mothers to attend the following programs. The program was presented in every school in every community we serve.

Another phase of our program for juniors has been our annual baking contest for girls' organization memberships. This program is presented only in our district towns. In its beginning some eight years ago the contest plan featured the correct baking of cakes. However, with wartime conditions and with certain food shortages, it seemed wise to place the emphasis upon wartime foods and therefore, wartime quick breads were featured in this year's contest. In each community, four girls are privileged to attend summer camp as the gas company's guests. Every child entering the contest has the benefit of the two classes of instructions on the preparation methods prior to the contest. The program is effective in that it reaches so many homes and so many parents express gratitude to us for this fine and stimulating educational program.

The third phase of our junior program is cooking and canning classes which are presented both during winter and summer months and are designed as our "Cooking Is Fun Club." This program features basic food preparation and during the wartime days has featured food preparation according to nutrition standards by featuring menu planning. While the majority of our enrollments come from the girls' organization membership, it is available to any child within the age group. In these classes, the children are divided into groups so that they are able to actually do the food preparation during the class with the supervision of our home service director. Then home assignment sheets, which are approved by the girl's mother, afford her additional opportunity to practice on the food preparation featured in the previous lesson.

B. Program for Homemakers

While interest in nutrition classes as a part of the American Red Cross nutrition program has gradually waned in most of our territory, each of our directors has had at least one of the standard courses to present during the calendar year. Our offering in this connection has been quite different than that offered by some instructors inasmuch as we had the facilities for presenting food preparation for correct cookery methods in three of each series of the classes. While industrial nutrition programs have not been so important in Oklahoma, we have attempted to anticipate needs of all wartime workers by preparing from time to time recipe material featuring foods for the lunch box. Each of our home service directors is a member of the local County and City Nutrition Committee and in many instances our girls serve as chairman of this committee.

During the summer months of '43, in approximately forty classes of instruction, some 7,500 attended the canning demonstrations. These demonstrations were attended by both men and women and were presented in each of our districts at various times of the day and evening in order to reach as many people as possible. Some 10,000 telephone calls were received during a sixty-day period requesting special information in connection with canning of a specific food. All such calls received personal instruction from the directors and were followed with an immediate mailing of our Victory Canning Guide. In addition, some 55,000 Canning Guides were distributed through our local offices and grocery stores located in various sections of the communities.

Our 1944 program was inaugurated early in March, prior to the early canning season by the establishment of Gardening Information Booths in all of our district offices. In order to make the activity a community one, we called upon volunteer workers to man the booths during the day. These

←Advertisements of the Oklahoma Natural Gas Company which illustrate the varied activities of the home service department

volunteers came from Garden and Flower Club Groups and registered volunteer workers with the Office of Civilian Defense.

All types of gardening information for distribution to consumers was obtained through the cooperation of the Extension Division of the Oklahoma A. & M. College. In order to be certain that other information given was authentic, we asked our volunteer workers to give no information concerning canning but to refer those customers direct to our Home Service Director's office, thus eliminating the possibility of consumers passing on their so-called "tried and true" methods.

Supplementing the information booths in all of our district offices, we featured an attractive, unique and properly designed miniature garden, either in our windows or on the office floor. These gardens, with actual vegetables growing, brought much favorable comment from our customers throughout the territory. Numerous letters were received from the public congratulating us upon this fine program.

"Canning Clinic"

In one of our larger district towns, we felt that the problem of stimulating attendance at demonstrations was such that it would be wise to suggest a community-wide canning demonstration program concentrated within a period of a few days to enable all those interested in attending such classes to do so. Our home service director called together representatives of all the agencies who would normally be interested in such a program and a plan was worked out for a two-day "Canning Clinic." Demonstrations were presented during mornings, afternoons and evenings. The City Auditorium was chosen as the place for the activity and our company furnished the model kitchen background and equipment which were used by all of the assisting demonstrators. All who were responsible in any way for stimulating home canning activities were present all day and were available for consultation service. The program gained momentum and became a community project in which the city newspaper became vitally interested. As a result of the activity, one of the Civic Clubs sponsored a garden contest and the Jr. Chamber of Commerce chose a plan for a canning exhibit with interesting awards at the close of the canning season.

During the months of April and May this year, we held Canning Consultation Days in all of our smaller communities. An exhibit featured all types of jars, seals and equipment used in canning, as well as photographic procedures in all methods. The director was there to make full explanation and to answer all types of inquiries. These were arranged in grocery stores, churches or offices, the location being determined by its availability to local residents.

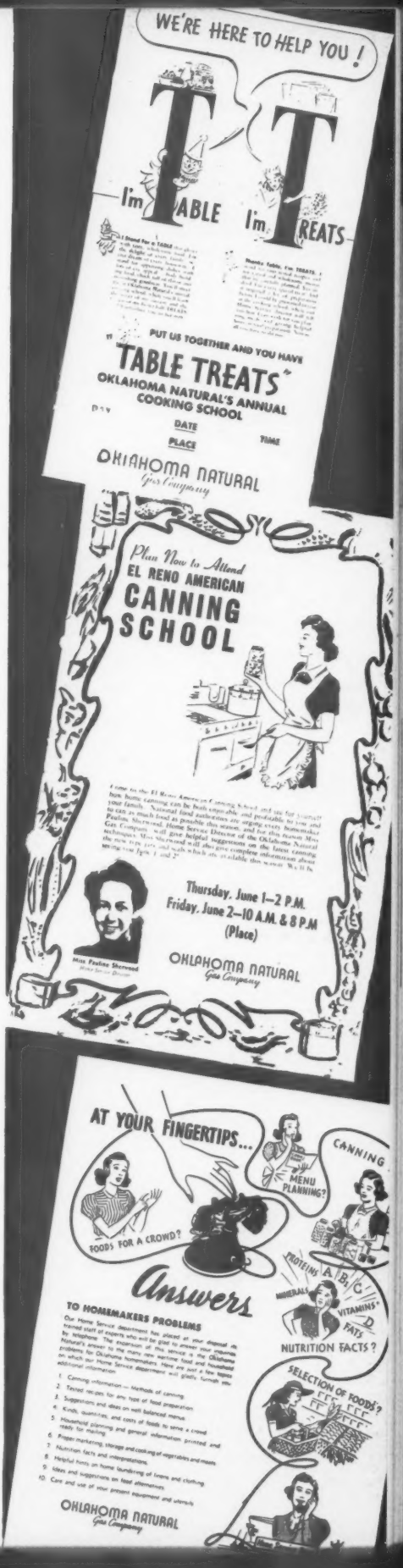
It has always been our policy to present once a year a cooking school program in all of the smaller communities which we serve. During the months of May and June, 1943, we presented an entirely different type of program than any previously attempted. Due to transportation difficulties, it was impossible to arrange for movement of our equipment and too, the nutrition program had not been as effectively presented in these smaller communities. Therefore, we set out to give a program of information on what was new and available in the food markets and to condense a modified nutrition course into a two-day program. Therefore, intensive lectures dramatized by the use of charts were presented before the homemakers. At each of these schools, we presented a small recipe booklet featuring wartime food preparation and a booklet, "Know Your Gas Company" giving information on care and use of equipment and services available from the company during wartime. Carrying out the military theme, these programs were designated as "Kitchens Alert." While our attendance was not quite as large as in normal years, we were gratified at the results obtained and the homemakers endorsed the program as being one of the most helpful we had ever presented.

In the spring months of 1944, we offered two different types of programs. One a cooking school in which we prepared good, old-fashioned dishes under wartime limitations and emphasizing the appetite appeal of foods rather than the nutritional angle. This was done for two reasons—we felt that with so much available material concerning nutrition, consumers were tired of the theme as such and secondly, it seemed wise to place greater emphasis on the care and use of equipment and thus create an awareness of the shortcomings of their existing appliances.

The other program offered to those living in the smaller communities was a program designed to introduce new foods and their uses and to give a brief nutritional course in review form. Our local managers were approached as to which type of program they wished to have presented in their community and it was interesting to discover that a majority of them chose the new foods program.

Briefly, the plan included selection of an outstanding club or organization in the community who were carrying on worthwhile wartime activities. The organization was asked to assume full responsibility for selling of tickets for a luncheon or dinner featuring these foods and to provide adequate committee membership to prepare the meal. The organization retained all the moneys collected from the ticket sale to use in connection with their benefit activities. Our company made available the gas equipment and obtained and paid for all costs of the food served. Orders placed in advance enabled us to purchase all foods locally.

The average size of these affairs was approximately 200 and in many instances those in attendance were people whom we could not have contacted through the usual medium of our cooking school since both men and women were in attendance at the



dinner meetings. The menu featured the use of soybeans and soy products. Since these have not been generally accepted in Oklahoma by any vast number of people, it served as an educational program and stimulated interest in these foods.

By providing the gas equipment for the women to prepare the meals on, many of our consumers were for the first time using a modern gas range and the gas refrigerator. Editors of newspapers praised the efforts of this program highly and we feel that the program was one of the most effective from the standpoint of nutritional education as well as appliance selling and establishing community acceptance of the company.

Following the meal, our home service director presented a brief talk summarizing facts on the soy products and also gave a brief summary of nutrition requirements and the important part that food plays in the war effort. The soy dinner program has also been offered to P.T.A. groups and our own employee groups in our district towns.

"Mrs. Trouble Shooter"

At the request of a number of women's groups, we presented a lecture entitled, "Mrs. Trouble Shooter" which was a particularly informative talk designed to give homemakers helpful hints on wartime homemaking problems, placing particular emphasis on the care and use of present equipment.

For the past two years we have maintained a grocers' survey program to determine availability of food supplies and costs of same, obtaining our information in chain stores and comparing it with independently owned stores. This information served as an effective guide in determining our recipe-testing program and the type of recipe material made available to consumers. Since for a number of years we have offered cooperative programs to all grocers in our community, they have been most friendly in their attitude and efforts to provide us with the information.

In all of our eight offices, we maintain a constant recipe-testing program, with each of our directors submitting materials to be used in our consumer booklets, bulletins, leaflets and various releases. These recipes were also featured in our weekly news columns released to all the small town weeklies throughout the state. This phase of our program was discontinued in December due to the existing paper shortage and since space was not available in these newspapers. We expect to reinaugurate the program as soon as this condition is removed.

Throughout the year we have been preparing a weekly menu plan which is sent to several of our newspapers in the state. This features seasonal and available foods and a balanced plan for a family of four. A special release is also prepared for the grocers magazine which is published in the state.

Our radio participation for our consumers has been definitely on a cooperative basis. Two of our directors appear each Saturday morning to give local tie-in information on Servel's "Fashions in Rations" Program and the scripts for these are written by the entire staff membership. Each girl has an assigned date thus enabling her to prepare timely and factual information. Our company has maintained for the past two years a wartime program for homemakers entitled, "Women Commandos." While the program is designed as an institutional type of advertising promotion, it has been one of the most effective service programs offered throughout the state. Our home service directors, due to their traveling in their territory, have been able to provide the director of the program with information concerning women's activities on the home front and from time to time appear on the program in an interview giving information on foods and nutrition. Frequently advertising announcements feature the activities of our Home Service Department and materials which we have available for the homemaker.

We have continued our program in connection with the gas appliance dealers by making regular calls upon them, informing them of the programs that we are carrying on in their behalf and also to obtain from them direct information concerning any service which we may render our mutual consumers. Names of purchasers of Victory Ranges have been obtained and each of these customers is called upon by our home service director. Special instruction sheets concerning the use of the range are mailed following a telephone call.

Part IV

THE SUMMARY

With a staff of fourteen directors, the following statistical information reflects the accomplishments of the entire scope of the home service program in our company from June 1, 1943, to May 31, 1944.

In some 500 meetings held in our club rooms, we reached 20,000 consumers. Two thousand and eight hundred releases were sent to weekly newspapers, 800 calls were made on dealers, 1,000 personal home calls were made, 35,000 telephone callers received special information and assistance, 12,000 callers visited our offices to ask for special assistance, and 450 lectures, demonstrations and cooking schools were presented to 33,000 women. Some 700,000 pieces of consumer recipe releases and foods information pamphlets were distributed.

Tappan Starts Gas Ranges Rolling

Tappan Stove Company officials are shown here as they looked over the first gas range manufactured for civilian use since Sept. 30, 1942. The new range rolled off the assembly line Oct. 24, 17 days after WPB had officially given the company permission to reconvert to partial civilian production. Left to right: C. V. McConnell, general sales manager; J. S. LeMunyon, assistant plant superintendent; R. M. Lamb, plant superintendent; Verne O. Kyle, personnel director; Paul R. Tappan, president; Ray J. Hammer, advertising manager; and William R. Mabee, assistant plant superintendent

Who's Who ... *Among New Association Officers*

C. E. PACKMAN

Chairman, Accounting Section

C. E. Packman

C. E. PACKMAN is controller of the Middle West Service Company, Chicago, the subsidiary service organization serving the Middle West Corporation's group of public utilities. As controller he acts as functional chief accounting officer of this group.

After attending public schools at Milwaukee, Wisconsin, Mr. Packman spent several years in private accounting practice. There followed several years in public accounting in Milwaukee, after which he was associated for two years with the Bureau of Internal Revenue. During one of the latter years he was located in Washington, D. C.

Mr. Packman joined the predecessor organization of the Middle West group in 1924 and has been continuously affiliated with them since that time.

He is a Certified Public Accountant; member of the American Institute of Accountants; member of the Controllers Institute of America and its Committee on Technical Information and Research; member of the Executive Committee of the Accounting Section, Edison Electric Institute; chairman of the Committee on Excess Profits Taxation and member of the Committee on Depreciation, American Gas Association; former member of the faculty, now member of the Advisory Board, International Accountants Society, Inc. (Extension University in Accounting.)

E. F. EMBREE

Vice-Chairman, Accounting Section

E. F. Embree

E. F. EMBREE is general auditor of the New Haven Gas Light Company, New Haven, Connecticut.

Mr. Embree became affiliated with the utility industry in 1925 as a traveling auditor for The United Gas Improvement Company after several years as general accountant with subsidiary companies of the Westinghouse Electric & Manufacturing Company and in 1929 became associated with the New Haven Gas Light Company. He is also assistant secretary and assistant treasurer of The Connecticut Gas and Coke Securities Company.

Mr. Embree has been active in the affairs of the A. G. A. Accounting Section for several years and has been chairman of the Customers' Accounting Committee and coordinator of the Customer Activities Group. He has also been a director and chairman of the New England Gas Association Accounting Division.

He is a member of the New Haven Chamber of Commerce.

HARRY K. WRENCH

Chairman, Industrial and Commercial Gas Section

Harry K. Wrench

HARRY K. WRENCH is president and general manager of the Minneapolis Gas Light Company, Minneapolis, Minnesota.

Born in Chicago, November 5, 1893, Mr. Wrench received his formal education in public schools and Michigan State College. He left the University in his junior year to attend First Officers' Training School at Ft. Sheridan. During the first world war he served overseas as 1st lieutenant, 23rd Infantry, 1917-1919. He was decorated for conspicuous bravery.

Mr. Wrench has been associated with public utilities continuously since 1922 when he started with the Marshall (Mich.) Gas Light Co., of which he was vice-president and general manager until 1924. In 1924-1925 he was general manager of Palm Beach Co., West Palm Beach, Fla., and supervisor of operations of Consumers Gas & Coke Co., Waycross, Ga. During the four subsequent years he was manager of the Wayne County Gas Co., Plymouth, Mich., and general manager of Michigan Federated Utilities.

He became president and general manager of the Lowell (Mass.) Gas Light Co. in 1930 and during the interim up to 1935 he was vice-president and general manager of Bangor (Me.) Gas Co., North Attleboro (Mass.) Gas Co. and Ramapo Gas Corp., Suffern, N. Y. In 1935, Mr. Wrench was named vice-president and general manager of Jacksonville (Fla.) Gas Co. and was also placed in charge of operations of St. Augustine (Fla.) Gas Co. and Savannah (Ga.) Gas Co.

Mr. Wrench was elected a director of American Gas & Power Co. and Public Utilities Management in 1937 and became vice-president and general manager of the Minneapolis Gas Light Co. In 1941 he was elected president, succeeding the late Fred W. Seymour.

He is a past president of the Mid-West Gas Association, member of the board of directors of the Minneapolis Defense Council, and a major and executive officer of the 2nd Brigade, Minnesota State Guard.

HARRY A. SUTTON

Vice-Chairman, Industrial and Commercial Gas Section

Harry A. Sutton

HARRY A. SUTTON is assistant general industrial fuel representative of the Public Service Electric and Gas Co., Newark, N. J.

A native of New Jersey, Mr. Sutton was educated at public schools and LaFayette College, Easton, Pa. He joined the Public Service Electric and Gas Co. in 1921, being assigned for a few months to the distribution department and thereafter devoting his attention to industrial and commercial gas sales. In 1926, he became supervisor of industrial, commercial and house heating sales in the Newark district, and the following year was appointed industrial fuel representative for Essex division. He was transferred to the general office as assistant general industrial fuel representative in 1929.

Mr. Sutton has been a member of the American Gas Association since 1922 and active in the Industrial and Commercial Gas Section since 1925. A member of the Managing Committee for many years, he has also been a member or chairman of many other committees including the following: Retail Industrial Gas Sales, Sales Experience, General Commercial, Commercial Cooking and Baking, Displays at National Industiral Expositions, Publicity, and Food Service Equipment. He has been a member of the latter committee for the past four years.

He is a member of the Metropolitan Industrial Sales Council (chairman in 1931 and 1936), the Metropolitan House Heating Council (chairman in 1931), the New Jersey Gas Association, American Society of Metals and The Army Ordnance Association. He has been secretary-treasurer of the New Jersey Gas Association since 1937.

F. J. HOENIGMANN

Chairman, Manufacturers' Section

F. J. Hoenigmann

F. J. HOENIGMANN is vice-president and general manager of the Cribben and Sexton Company, manufacturer of Universal gas appliances.

A graduate of the University of California, Berkeley, Mr. Hoenigmann received his B.S. degree in the College of Mining. He served in the first world war as a first lieutenant in the 63rd Infantry, 23rd Machine Gun Battalion, and as aide-de-camp to General Hugh S. Johnson.

Prior to joining Cribben and Sexton Co. in 1930 as general sales manager, he spent ten years with the Moline Plow Company, Moline, Illinois, in various executive positions, including general superintendent and works manager. He was elected a director and became general manager and executive vice-president of Cribben and Sexton in 1940.

J. H. WARDEN

Chairman, Residential Gas Section

J. H. Warden

J. H. WARDEN is general sales manager of the Oklahoma Natural Gas Company, Tulsa, Oklahoma.

Born in Texas, November 6, 1898, Mr. Warden was graduated from the University of Texas in 1922 with Bachelor of Science and Mechanical Engineering degrees. He served with the Navy during first world war.

He joined the utility industry on July 1, 1922 as student engineer in the El Paso Electric Company. After serving as industrial engineer and assistant sales manager until March 1927, Mr. Warden was appointed sales manager of the Gulf States Utility Company at Lake Charles, La. In October, 1928, he returned to the El Paso Electric Company as general sales manager.

He became sales manager of the Brockton-Edison Co., Brockton, Mass., in July 1934 and in October 1936 was named general sales manager of Oklahoma Natural Gas Company.

MOTTO

It may never be mine,
The loaf or the kiss or the kingdom
Because of beseeching;
But I know that my hand
Is an arm's length nearer the sky
For reaching.

from *Petition*, EDWIN QUARLES

J. J. QUINN

Vice-Chairman, Residential Gas Section

J. J. Quinn

J. J. QUINN, general sales manager of the Boston Consolidated Gas Co., Boston, Mass., has been active in the gas industry more than thirty years. During this period he has served on a number of American Gas Association Committees and as chairman of the Refrigeration Committee in 1935.

Born and educated in New York City, Mr. Quinn's initial employment in the gas industry began on July 1, 1911 with the Pittsfield Coal Company. After a brief military interlude in World War I, he became superintendent of the Citizens Gas Light Co., Quincy, Mass.

In 1930 he went to Boston from the presidency of the Citizens Gas Light Company of Quincy serving as assistant to the vice-president in charge of sales. In 1937 he became general sales manager of the Boston company.

He is a past president of the New England Gas Association, the Guild of Gas Managers and the Quincy Rotary Club, a director in the Advertising Club of Boston, and a member of numerous other Boston clubs. Recently he was elected chairman of the Copy Committee in the American Gas Association's national advertising program.

L. E. KNOWLTON

Chairman, Technical Section

L. E. Knowlton

L. E. KNOWLTON, engineer of the Providence Gas Company, Providence, R. I., has been an active member of the American Gas Association's Technical Section for a number of years. He has served as chairman of the Gas Production Committee, 1940-1941, and been a member of the Managing and other important committees.

Joining the Providence Gas Company in 1919, Mr. Knowlton became assistant engineer of manufacture in 1923, engineer of manufacture in 1931, general superintendent in 1940 and engineer in 1941. During the first world war he was captain of a machine gun company in the 79th Division.

Also active in the New England Gas Association, he is vice-president and a director of that organization and was chairman of the operating division in 1939. He is a member of the subdivision on utilities of the State Council of Defense, the American Society of Mechanical Engineers, The Eastern States Blast Furnace and Coke Oven Association and the Guild of Gas Managers of New England.

LESTER J. ECK

Vice-Chairman, Technical Section

Lester J. Eck

LESTER J. ECK is vice-president and assistant general manager of the Minneapolis Gas Light Company, Minneapolis, Minn.

A native of St. Paul, Minn., Mr. Eck was graduated from the University of Minnesota in 1923 with a B.S. degree in Chemical Engineering. A year later he received his M.S. degree in the same field and in 1927 was awarded the L.L.B. degree by Minnesota College of Law.

His entire business career has been with the Minneapolis Gas Light Company. Starting in 1924 as works chemist, he became water gas foreman in 1926, test engineer in 1928, assistant superintendent of production in 1929, superintendent of production in 1931, general superintendent in 1936, and vice-president and general superintendent in 1941. He was named vice-president and assistant general manager this year.

A veteran of Association committee work, Mr. Eck has made many important contributions to gas technological progress. He was chairman of the American Gas Association's Water Gas Committee in 1933 and has been a member of the Gas Production and Distribution Committees at various times. He is currently a member of the Mixed Gas Research Committee, Subcommittee on CP Heating Equipment Requirements, and was 1943 chairman of the Distribution Subcommittee on New Developments. He also represents the Midwest Gas Association in the A. G. A. Technical Section.

Laboratories Reconstruction Under Way Following Cleveland Fire

Laboratories building and adjacent parking lot following fire

RECONSTRUCTION of the American Gas Association Testing Laboratories following the devastating Cleveland fire which resulted in severe damage to the Laboratories and injuries to eight employees and five visiting manufacturers, is making substantial progress.

The fire, which reached the Laboratories in a matter of a very few seconds, completely gutted all offices and destroyed almost all records and research data with the exception of some testing and inspection files which while charred are still usable. The intense heat penetrating the building before the fire reached it, together with alarms spread by a number of members of the staff, fortunately gave sufficient warning to enable every person to leave the Laboratories without injury. Those burned were among the first to leave.

Three women scientists, Virginia Boyer, Marjorie Gast, and Elizabeth Myers were among the injured employees. Others were E. J. Abbott, Herman Benditz, John J. Matter, J. B. Morton, and T. W. Patterson. The manufacturers burned were Marius Marrapese of The W. J. Schoenberger Co., Leslie Vixler of The Patrol Valve Co., Earl Hillebrand of the Florence Stove Co., J. C. Scherrer of The Security Manufacturing Co., and George Reznor of The Reznor Manufacturing Co.

While the second floor offices suffered the most, other sections of the building and its equipment were also badly damaged. Loss of records and need for checking equipment including miles of piping will require considerable time before research and testing activities can be resumed on a normal basis. Operations connected with the production of automatic oxygen regulators for the Army Air Forces are being given top priority in scheduling resumption of work due to the urgency of this war contract.

The majority of appliances undergoing testing operations were not seriously damaged although a large number of accessories, awaiting test, were destroyed.

The substantial and fireproof construction of the Laboratories was not only responsible for keeping it from being completely destroyed but was instrumental in saving surrounding buildings and homes on two sides. These remained practically intact except for broken windows. The Laboratories' four gas holders likewise withstood the fire with apparently no damage.

Fire damage to laboratories offices

Laboratories Flyer Killed in Action

A VETERAN of twenty-six aerial engagements at sea against the Japanese, twenty-one year old George A. Duncan of the American Gas Association Testing Laboratories was killed in action on September 13, the Navy has revealed. His death came as a shock to his associates at the Laboratories, marking the first casualty sustained by the fifty former members of the staff now serving in the armed services. He was to have received a leave at Christmas time.

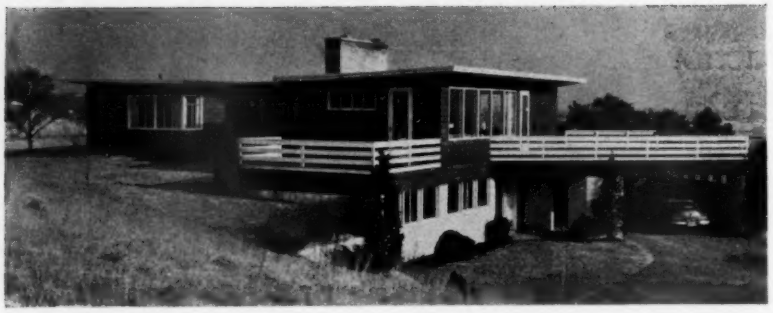
Employed as a draftsman following his graduation from a Washington, D. C., high school in 1941, Petty Officer Duncan enlisted in the Navy on June 15, 1942. He received his "boot" training at Great Lakes, Illinois, and shortly afterwards realized an ambition to join the Naval air arm, training at Pensacola, Florida. Going to sea last February, he was stationed aboard a carrier, reportedly flying daily missions as a radioman and rear-seat aerial gunner of a dive bomber. He is believed to have been shot down during the battle of Palau.

Petty Officer Duncan is survived by his father and his mother, Mrs. Clara P. Stanley of Maple Heights, Ohio. His brother, David J. Duncan, is serving in the Pacific as an Electrician's Mate with the Seabees.

Koppers Coke Oven Construction

EIGHTEEN batteries of Koppers-Becker coke ovens, totaling 1,142 ovens with an annual coal carbonizing capacity of 9,196,000 tons, were completed or under construction by Koppers Company, Engineering and Construction Division, in the United States, Canada and Brazil during 1943, according to Joseph Becker, vice-president of Koppers and general manager of the division.

Largest of the coke oven projects is that for the new Geneva Steel Company plant at Geneva, Utah. One battery of 63 ovens is in operation, and three batteries of 189 ovens are ready for operation. The four batteries will have a total carbonizing capacity of 1,766,000 tons.



The Ernest Gunnar Peterson residence at Falmouth, Mass.

Architect's Conception of Tomorrow's Home

DEBUNKING those "star-gazers" who, he says, profess to see in the immediate postwar period homes of a shape, size and content as to be completely unrecognizable by all previous standards in this country, Architect Ernest Gunnar Peterson, of Falmouth, Mass., suggests a house design that, he believes, proves that a home can be modern both inside and outside without relinquishing intrinsic beauty and serviceability.

Having the courage of his convictions, Mr. Peterson built his house design on a knoll overlooking Vineyard Sound and now lives in it. He affirms that it substantiates all his claims for maximum "livability."

In recent months the house has attracted hundreds of visitors, among them architects, heating engineers and house contractors who wanted to inspect this preview of what the home of the immediate future may contain. The fact that this architect's version of the "house of tomorrow" is located in the heart of conservative Cape Cod, where adherence to traditional architecture is proverbial, has only added to its reputation.

Residence Building Trends

Mr. Peterson suggests four main trends in residence construction that he believes the public will adopt on wide scale in the immediate postwar period. They are:

1. *Modern architecture.* Nothing too revolutionary, but a definite departure from traditional designs.
2. *Large glass areas.* This trend, he says, was well under way before the war and will be continued and expanded.
3. *Radiant heating.* It will be adopted progressively, he affirms, because it offers greater comfort and economy of operations. Moreover, he says, it is the most practical system for heating houses with huge window areas, and is the only practical solution of the problems of the basementless house.
4. *Built-in furniture,* including bookcases, buffets, bedroom shelving, and davenports.

Believing these trends will be felt immediately after the war, Mr. Peterson designed his house accordingly. It is modern, with flat roof sections that serve as sun decks and porches. The house has concrete block walls on the first floor and red cedar clapboards for the second story.

Temperatures in the area where the Peterson home is located frequently drop below zero, so this architect's advocacy of large window areas is not restricted to postwar houses built in warm climates.

Mr. Peterson is a robust champion of radiant heating. He says: "Having passed the last two winters in my radiant heated home with great comfort and the use of a minimum amount of fuel oil, the system has my wholehearted approval."

The Peterson house consists of six rooms, a large hall, and two baths on the second floor. The first floor is made up of a studio and reception room, coat room, lavatory, laundry and boiler room. There is also an open carport that will accommodate two cars.

The boiler that furnishes hot water to the radiant heating coils is located in a small utility room on the first floor.

The first floor radiant heating coils consist of 800 feet of 2-inch wrought iron pipe on 24-inch centers, laid on a gravel fill. The second floor layout uses 800 feet of 1½-inch wrought iron pipe on 12-inch centers, the coils being laid on prefabricated concrete joists. All coils are the spiral type, and were fabricated and welded at the site. The concrete slab for each floor was poured directly over the coils.

Louisville To Get Texas Natural Gas

THE Louisville Gas and Electric Co., Louisville, Kentucky, has been authorized by the Federal Power Commission to construct and operate additional facilities, including a 65-mile pipe line to connect with the Tennessee Gas and Transmission Company's Texas to West Virginia line. The company has arranged to obtain 10,000 M cu.ft. of natural gas daily from Tennessee's pipe line for service in the Louisville area.

"Down Under" Sags from Taxes

THE annual report of the South Australia Gas Company notes that its taxes are more than six times the figure paid the year immediately preceding the outbreak of war.

The printed copy of the report carries the A. G. A. industrial slogan "The Trend Today Is to GAS."

Gas Production Research Committee Organizes

P. T. Dashiell

FIRST meeting of the newly-formed Gas Production Research Committee of the A. G. A. Manufactured Gas Department took place October 20 in New York. Under the chairmanship of P. T. Dashiell, vice-president, The Philadelphia Gas Works Company, who was recently appointed to head this activity, a full discussion of the committee's function developed.

Established primarily to carry out an enlarged gas production research program and to put into effect recommendations of the Postwar Planning Committee, it was agreed that among the principal purposes of the committee are:

(1) To assess and codify the present state of the art of gas manufacture.

(2) To become a listening post and receiving station for new ideas, with means for their development.

(3) To establish means for analyzing ideas and formulating recommendations for their orderly disposition.

(4) To establish means for making available to subscribers those ideas which may be applied promptly to the benefit of operations.

(5) To consider the essentials for a long-range research plan that will obtain the fullest active interest and support of all parties of interest. In this category, the position respecting patents should have particularly careful study.

One of the first moves of the committee will be to arrange for representatives of all established builders, research organizations and others to present their ideas for improving gas production processes. Secondly, it was decided to recommend the employment of an experienced technical man to work full time on selected activities of the committee.

A Technical Advisory Committee under the chairmanship of F. J. Pfluke, immediate past chairman of the Gas Production Committee of the Technical Section, has been set up to assist the Gas Production Research Committee.

From Murdock to Modern Industrial Gas Practice in England

- **In an interview with C. George Segeler, A. G. A. utilization engineer, John Fallon, chairman and managing director of Incandescent Heat Company, Ltd., of Birmingham, England, provided some noteworthy information concerning industrial gas practice and the use of American equipment in England. In addition, he brought an historical memento, consisting of some pieces of William Murdock's original gas holder together with documents and photographs which he presented to the American Gas Association.**

- **As directing head of Incandescent Heat Company, the holding company for some of the largest gas and electric equipment houses in England, Mr. Fallon is in a unique position in the utility industry. He is past president of the Birmingham Metallurgical Society and a member and director of numerous business and civic organizations. He has travelled extensively and carried out important metallurgical engineering work in the United States, France, Italy, Belgium, Germany, etc., and has contributed to proceedings of various technical societies. Some eight years of his time was spent in this country in metallurgical engineering. Mr. Fallon holds a number of metallurgical patents which have been applied throughout the empire and continental countries.**

MILLIONS of dollars worth of American industrial gas equipment have been imported by the Incandescent Heat Company or its subsidiaries, one of whom is the Selas Gas & Engineering Co., Ltd., Manchester, Mr. Fallon reported. He indicated that his company has been particularly successful with Lee Wilson gas equipment.

Speaking of his company experience generally, bearing in mind that it handles electric and other competitive equipment, Mr. Fallon stated that it produced approximately 65 per cent gas equipment and that he was, in general, far more pleased with the performance of the industrial gas units than with any other type. Specifically illustrating this point, he asked about American practice in copper brazing of steel parts which is done with either induction heaters or electric resistor furnaces protected by gas atmospheres.

Mr. Fallon described a recent development where one of his companies used a spiral radiant gas heat tube closely surrounding the work and, as a result, has been able to out-perform the electric resistor equipment for the purpose of copper brazing. Since his company was one of the large producers of such equipment for electrical purposes, he felt that this instance was a clear-cut example of preference for gas. He emphasized the fact that gas has such unlimited flexibility in releasing large quantities of heat economically in a given space.

He described many other developments of his company which he believed to be unknown in the United States. Among these is a unique combination roller and walking beam hearth which Mr. Fallon regards as the outstanding means of transporting work through industrial gas furnaces. Still another development he mentioned is a system of interlocked nickle-chrome steel tiles which form a metal hearth protecting refractories from abrasive wear.

Following these observations, Mr. Fallon presented the accompanying photograph of the original Murdock gas holder, pieces of this holder and other historical mementos to the American Gas Association. He gave the following interesting history of the holder:

History of First Gas Holder

The complete history of the gasholder at Soho Foundry has never been fully investigated. There may be material of interest in the great Boulton & Watt collection of papers in the Birmingham Reference Library, but these await intensive study.

At present all that can be said is as follows:

William Murdock (1754-1839) carried out his first experiments while he was living at Redruth, Cornwall, as the agent of Boulton & Watt between the years 1778 and 1798.

When he returned to Soho Foundry he was engaged on experiments on a larger scale, which led eventually to the lighting of the whole works by gas. His first gasholder at Soho Foundry, as we know from the evidence of his assistant Samuel Clegg, was very small indeed, little more in fact than a laboratory model. When the lighting plant was extended a larger gasholder became necessary, it seems likely that the first gasholder was rectangular, but it did not last very long, because as far as can at present be ascertained, the existing holder was built about 1804-8.

It is of the usual wet cylindrical single lift type, with three sets of cast iron balance weights and wrought iron chains.

The principal dimensions are:

Sump 37'6" dia. x 20'0" deep
Holder 35'8" dia. x 19'0" high
Capacity of holder approx. 20,000 cu.ft.

The holder was used for gas made for lighting purposes in horizontal retorts until about 1900, when the gas works were dismantled, and the holder used for producer gas. About 1913 the making of producer gas was discontinued, and the holder has not been used since.

After the 1914-18 war, there were proposals that the holder, which was then in quite good condition, should be preserved. There was considerable correspondence in which some people attempted to prove that the holder was made by Murdock in 1798, and others took the opposite view. After some years of this rather pointless correspondence, the holder was found to be in such a state that it could not be preserved. Many years' exposure to gas water and the atmosphere had corroded the whole shell.

At the beginning of the present war the sump was cleaned out and put into use as a static water tank. To give access to it the few remaining parts of the side of the holder were removed. Now only the roof, stays, balance weights and chains remain. The roof is so badly corroded that pieces fall out if touched.

New England Gas Managers Discuss House Heating Investment Costs

R. J. Rutherford

THE first of a series of Company Managers' Conferences sponsored by the New England Gas Association to stimulate study of fundamental problems of the New England gas industry was held October 20 at the Hotel Statler, Boston. More than 50 gas company managers, representing approximately 95 per cent of the gas meters in that area, participated in a discussion of "Production Investment Planning for House Heating Expansion." R. J. Rutherford, vice-president, Worcester Gas Light Co., chairman of the conference committee, presided. Hall M. Henry, president of the Association, who originated the idea of the conference, took a prominent part in the meeting.

Core of the meeting was the presentation of detailed company case studies by Gordon G. Howie, vice-president and general manager, Cambridge Gas Light Company, and John A. Weiser, president and general manager, The Newport Gas Light Company.

These studies involved individual analyses of the production and investment costs required to supply the gas house heating load and did not attempt to evaluate the efficiency of other than standard and conventional methods. The efficiency of other methods and fuels is now engaging the attention of other industry sources such as the A. G. A. Postwar Planning and Gas Production Research Committees, the Institute of Gas Technology, Battelle Institute, equipment manufacturers and others.

In addition to the ultimate investment which a company might face, the Cambridge company showed that a considerable house heating load can be secured with relatively minor plant investment costs through correcting bottlenecks in existing plant facilities.

It was emphasized during the meeting that consideration should be given to methods of lowering investment costs for equipment used for peak loads only. One suggestion was made that, for a small company at least, the purifier and scrubber might be an integral unit without the necessary interconnecting and by-passing valves.

Particular emphasis was placed on the relative importance of different segments of the investment in production equipment. Whereas emphasis in the past has been on increasing capacities of the generating equipment, the higher percentage of investment in cleaning the gas or in producing steam indicated that greater savings in investments might be realized through studying these portions of the investment.

Conclusions were reached at the meeting as follows:

1. The house heating load is of vital importance to the New England gas companies.
2. The production investment costs with conventional equipment place a substantial burden in fixed charges on the heating load.
3. Some companies may not be realizing the maximum capacities possible with existing equipment.
4. Certain companies can take on added loads with minor investment costs by correcting bottlenecks in existing plants.
5. Other methods should be studied to see what can be done in meeting house heating expansion requirements.

Prepared discussions were presented by E. L. Hall, manager, Manchester Gas Company; L. E. Hurst, vice-president and general manager, Haverhill Gas Light Co.; C. G. Young, manager, Springfield Gas Light Co., and Chairman Rutherford.

What To Do about the Weather

• The September 1943 issue of the A. G. A. MONTHLY carried an authoritative article on long-range weather trends written by Raymond Little, utilization engineer and commercial manager of the Equitable Gas Co., Pittsburgh, and A. G. A. representative on the National Joint Committee on Weather Statistics. In the course of correspondence with C. George Segeler, A. G. A. utilization engineer, John J. O'Neill, science editor of the *New York Herald Tribune,* made the following interesting comments on Mr. Little's observations and added some noteworthy ideas of his own. While not written for publication, Mr. O'Neill has kindly consented to allow its reproduction in the MONTHLY.

THANKS for sending me the September, 1943 issue of the AMERICAN GAS ASSOCIATION MONTHLY containing the article by Ray Little on weather trends. I found the article very interesting.

"There should be no difference in the graphical trends whether degree days or recorded degrees are charted provided the same data is used in each method.

As far as the New York City data is concerned, it seems to me that the results obtained by Mr. Little and those which I obtained are in such close agreement that the differences are insignificant (Figs. 6 and 7). From a rather crude measurement of Mr. Little's graph in Fig. 7 there is a definite decrease in the number of degree days indicating that recorded temperature in the city is rising. The best fit straight line trend gives for the 55 years' period an annual decrease in degree days at the rate of about 6.5 degree days per year.

The Albany graph when treated by the same method for the same period gives practically the same results, 6.5 degree days per year decrease. If the section of the curve is increased to 75 years the rate of decrease is raised to 7.3 degree days per year. If the line is extended to cover the full 105 years shown, a decrease in degree days is still shown but the rate of decrease is reduced to 2 degree days per year.

The Lake Placid data shows a tremendous decrease in degree days indicating a very abnormal rise in temperature over the 30 year period covered. This rise, however, is so out of line with the other data that I don't think a conservative viewpoint would permit its inclusion.

I recall making an analysis of the New York City temperature data some years ago in which I charted the average temperature for each month separately, that is, all the Januarys in one graph, all the Februarys in another. I wanted to determine whether any particular part of the year made a consistent excess temperature contribution or whether it was distributed through all of the months. It is my recollection that the warmer half of the year contributed all of the increased temperature and that this increase was of sufficient magnitude to counteract a deficiency of temperature in the colder half of the year and leave a balance giving a total excess for both halves combined.

It would seem to me that for your particular purposes the colder half of the year could be studied separately. The winter storms and storm tracks comprise a meteorological entity which differs completely from the situation prevailing in the summer months. The change in the conditions affecting the atmospheric structures is equivalent to a 46 degree change in latitude, based on the shift of the sun's altitude from midsummer to midwinter. The shift in storm tracks amounts to probably less than half of this amount.

I discussed with Dr. Kimball, the late chief of the N. Y. Weather Bureau, the effect of artificial heating on the recorded temperatures at the Whitehall Building station. We examined the records from about a half dozen sub-stations such as Flushing, Coney Island, Westchester, Staten Island

and some in New Jersey. We did not make a formal investigation but rather a cursory survey to determine if a further inquiry were justified. The records of the outlying stations, as I recall, were definitely lower than the Manhattan station. We decided that a rather extended investigation would have to be made to determine if the combustion of fuels were responsible for the difference.

While there is, unquestionably, an effect from the combustion of vast quantities of fuel in the city, this fuel-burning situation produces conditions which may have a contrary effect. For example, the products of combustion discharged into the air are water vapor and carbon dioxide, plus some free carbon. All of these substances are excellent absorbers of solar heat radiation and provide an invisible (except for the carbon dust) screen and mirror which absorbs the heat which the area of the city would receive from the sun if they were absent, and also reflect some of the heat radiation back into space. At times when one approaches the city in an airplane the whole area over it appears to be hung with a black curtain which, seen in the right light and viewed in the axis of its greatest dimension (horizontal) looks almost like a solid block of coal.

I know of no data which enables us to calculate the fuel heating effect, or the solar heat screening effect, but both, I believe, are of sufficient magnitude to be worthy of a comprehensive research program.

I believe that if a complete survey were made of all weather bureau data points in the United States that important long range weather changes would be revealed, some showing steadily increasing and others steadily decreasing temperatures. Integration of a world-wide survey would undoubtedly show a constant temperature, or at least one changing so slightly we would be unable to detect its variation. This would not preclude cyclic changes, even of a world-wide character, since the Smithsonian observation indicates a relatively large variation in the sun's heat as recorded at the clear high altitude stations. Local shifts in the semi-permanent atmospheric structures may be taking place with resulting cycles and the detection of relatively small annual average temperature changes at many locations may be necessary in order to recognize them.

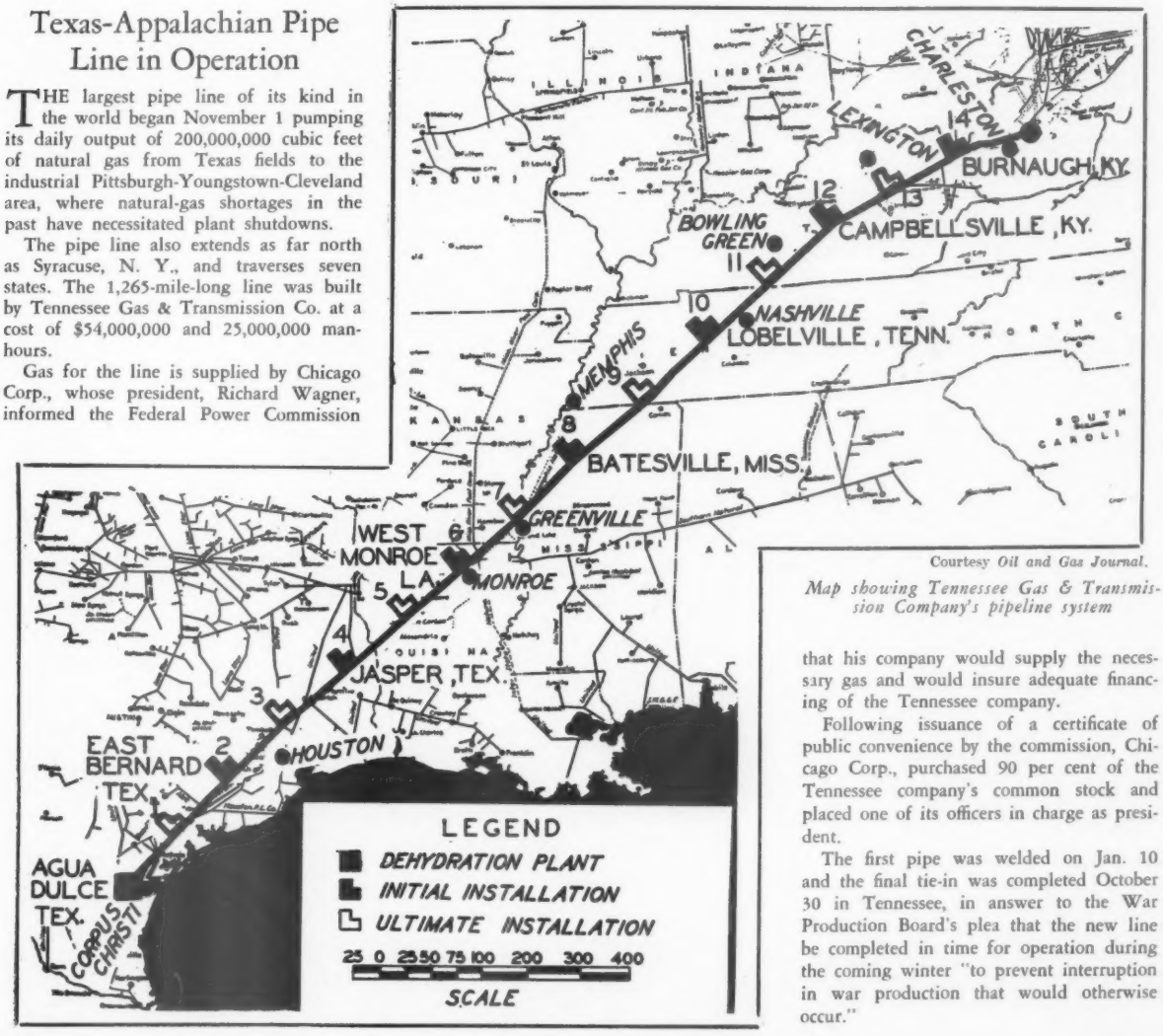
The United States is going to be occupied for a long time and planning for tomorrow may be as important as catering to today. It looks to me as if a very extensive research program into the weather, yesterday's, today's and tomorrow's weather, climate and weather cycles were in order and the job should not be left to the government. A large number of industries are very directly affected by the weather and all should be brought into a cooperating unit.

Texas-Appalachian Pipe Line in Operation

THE largest pipe line of its kind in the world began November 1 pumping its daily output of 200,000,000 cubic feet of natural gas from Texas fields to the industrial Pittsburgh-Youngstown-Cleveland area, where natural-gas shortages in the past have necessitated plant shutdowns.

The pipe line also extends as far north as Syracuse, N. Y., and traverses seven states. The 1,265-mile-long line was built by Tennessee Gas & Transmission Co. at a cost of $54,000,000 and 25,000,000 man-hours.

Gas for the line is supplied by Chicago Corp., whose president, Richard Wagner, informed the Federal Power Commission that his company would supply the necessary gas and would insure adequate financing of the Tennessee company.



Courtesy *Oil and Gas Journal*.

Map showing Tennessee Gas & Transmission Company's pipeline system

Following issuance of a certificate of public convenience by the commission, Chicago Corp., purchased 90 per cent of the Tennessee company's common stock and placed one of its officers in charge as president.

The first pipe was welded on Jan. 10 and the final tie-in was completed October 30 in Tennessee, in answer to the War Production Board's plea that the new line be completed in time for operation during the coming winter "to prevent interruption in war production that would otherwise occur."

Radio—Allocation of Channels to Gas Utilities

By WARREN T. BULLA

Supt., Communication and Dispatch Natural Gas Pipeline Co. of America

• Following is a digest of a report prepared by Mr. Bulla and presented to the Federal Communications Commission. Several months were required in securing data from a representative group of the 1200 gas companies operating in the U. S.

• An exhibit consisting of approximately 60 pages of pertinent data prepared jointly by the electric, gas and water group was presented to the Commission.

• Other interests proposed a common carrier radio service to mobile units; however, utility representatives were doubtful that the top priority necessary would be provided.

• Some 30 gas companies (including those operating combination gas and electric systems) are using special emergency channels. Several others have filed construction permits.

• Mr. Bulla estimates several months will elapse before a decision is given by the Commission.

WARREN T. BULLA, American Gas Association representative to Committee No. 4, Panel No. 13 of the Radio Technical Planning Board, appeared before the Federal Communications Commission in Washington, D. C., on October 21, 1944 to present information regarding the gas companies and their radio communication needs.

It was pointed out that the gas industry contributes to the health and comfort of more than half the nation's population, and thus the use of Radio was in the public interest.

To illustrate the actual use to which radio communication has been put during serious emergencies and of its value in restoring conditions to normalcy, two incidents were related, one of which pertained to a long haul natural gas system and another which described the use by a manufactured gas system, in addition to several described in the exhibit.

These facts demonstrate that the gas utilities have a real need for emergency radio communication both as a point-to-point and as a mobile service over distances up to 100 miles or more.

In presenting his testimony, Mr. Bulla stated: "In accordance with information which we have collected from the gas companies operating in the United States, the anticipated expansion of service by present users, together with those companies who contemplate the use of radio in the future, indicates that the following frequencies will be required." (See table below.)

It was stated that the requirements of 37 frequencies was based on usable channels. The experience of present users with such equipment as has been available indicates that existing separations do not permit satisfactory operation on adjacent channels of stations in the same locality.

Committee No. 4, Panel No. 13 of the Radio Technical Planning Board, outlined the needs of the Power Utilities. (This term covers electric, gas and water companies, and collectively constitutes the largest single user of radio under the Special Emergency Classification of the Federal Communications Commission.)

The committee objected to the joint occupancy of channels requested by services other than utilities on the ground that such sharing would materially reduce the effectiveness of the utility service. Also the committee claimed that the general public would benefit materially if the Commission's rule, which now restricts the operation of all Special Emergency Stations to the period during which certain emergencies exist, were revised to permit the use of radio during operations aimed at the prevention of such emergencies.

	Band—Mc				
	2-6	*30-40*	*100-300*	*300-3000*	*Total*
Fixed, mobile and portable	2	5	2	2	11
Mobile only	–	5	2	2	9
Point-to-Point	*	–	4	4	8
Portable only	–	3	4	2	9
Total	2	13	12	10	37

* Fixed also to be available as point-to-point.

Horizontal Drilling

DRILLING holes horizontally in several directions—like the spokes of a giant wagon wheel—from a working chamber nearly 400 feet underground to get oil which could not be extracted in primary recovery operations is now being tried out in Pennsylvania, according to a Bureau of Mines report.

Begun about two years ago in the Franklin Heavy oil field of Venango County, Pa., the horizontal drilling project is the first of its kind in the state. It is being conducted by a group of Pennsylvania oil companies and individuals to determine the feasibility of stepping up oil production by this method.

At the time of the Bureau's investigation of the project, the first two "spokes," each stretching nearly half a mile in opposite directions from the "hub," or working room, had been completed. Preparations were under way to start other drill holes in the wheel-spoke pattern.

A copy of the publication, Report of Investigations 3779, "Horizontal Drilling for Oil in Pennsylvania—A Preliminary Report," by C. W. Elder, Jr., may be obtained without cost from the Bureau of Mines, Department of the Interior, Washington 25, D. C.

Plan Natural Gas Lines to Four Mid-West States

PLANS for construction of a $70,000,000 natural gas pipe line from the Hugoton fields of Kansas and Oklahoma to serve cities and towns in Iowa, Illinois, Wisconsin and Michigan were announced Nov. 2 by William G. Woolfolk, president of United Light & Power Company.

Mr. Woolfolk said the project will be undertaken if the Securities and Exchange Commission approves a proposal to liquidate and dissolve American Light & Traction Co., subsidiary of United Light & Power Co. Filing of the petition was announced at Philadelphia Nov. 1.

If the plan is approved by the Federal agency and local authorities having jurisdiction, Mr. Woolfolk said, American Light's gas-distributing subsidiaries at Detroit, Milwaukee and Madison, Wis., will become completely independent and would own and operate the pipe line.

Necessary steps, he added, include merger of Milwaukee Solvay Coke Co. and Milwaukee Gas Light, the refinancing of Milwaukee Gas Light and Madison Gas & Electric Co. and the sale of certain other assets. Business of Solvay will be continued when natural gas is introduced in Wisconsin.

"Organization and building of the new pipe line is primarily for the purpose of protecting and preserving the operating companies of the American Light system which are to become independent organizations and to better serve the consumers," Mr. Woolfolk said. "There is no natural gas in Wisconsin at all, and in Michigan there is not enough in sight to provide for necessary expansion in the future."

United Light engineers, he said, have worked out plans which would "provide for delivery of twice as much gas in one day as is now possible from a single line," utilizing extensive underground storage fields already owned in Michigan.

Rubber to Last Lifetime Made of Sand and Gas

NATURAL gas and sand are utilized as basic raw materials from which a marvelous new product, silicon rubber, is made according to Dr. A. Lincoln Marshall, head of the chemical section of the General Electric Research Laboratory at Schenectady, N. Y., which is pioneering its development. Developed for war uses and just removed in November from the government's secret list, silicon rubber has many advantages over natural rubber, including life-time wearing qualities, and offers a multitude of postwar uses.

Largely unexplored since its discovery more than forty years ago, the field of silicon chemistry was probed by General Electric in a search for the answers to two mechanical problems presented by the military.

Gaskets of natural or synthetic rubber for superchargers on the Army's B-29 bombers became brittle after extended operations at 302 degrees Fahrenheit. Asbestos gaskets on twenty-four-inch searchlights co-ordinated with big guns of the Navy, broke with the shock when the guns let go.

Silicon rubber, company officials said, eliminated those difficulties.

The compound, known chemically as dimethyl silicon, crosses, or mixes, inorganic and organic substances. Its molecular backbone is composed of alternate silicon and oxygen atoms similar to the quartz molecule, which gives it a high resistance to heat. Introduction of two methyl groups to each silicon atom results in a compound which also has plasticity and elasticity.

Natural and other synthetic rubbers deteriorate rapidly at temperatures above 212 degrees Fahrenheit, the boiling point of water. Dr. Marshall reported that silicon rubber has been subjected to a temperature of 302 degrees for 75,000 hours "and appears to be as flexible as ever."

Gas and Gas Appliances Cause Few Fires

GAS and gas appliances continued to hold a fire prevention record in 1943 according to figures published by the National Fire Protection Association in its quarterly magazine for October 1944. Noting that the figures shown are reasonable approximations based on the experience in typical states and not exact records, the NFPA estimates the number of fires caused by gas and gas appliances in the United States at 4,000 and the property loss at $2,400,000.

This compares with an estimated 17,000 fires and $7,000,000 property loss attributed to electrical power consuming appliances and 53,500 fires and $33,500,000 loss charged to "electrical, fixed services; fires due to misuse, or faulty wiring and equipment."

Oil burners are estimated to have caused 12,500 fires resulting in loss of $5,600,000, while hot ashes and coals charged with starting 14,500 fires causing $4,500,000 loss.

O. I. Corwine, welder in the Sarepta field, displays the cap jack he developed for inserting go-devil scrapers and plugs in large size pipe lines

The Go-Devil Gets a Boost

O. I. CORWINE, welder in the Sarepta field of the Shreveport district of United Gas Pipe Line Company, has developed an idea to ease the task of inserting a scraper or diaphragm plug in the line in preparation for a go-devil run. During the recent internal cleaning of the Webster-Sterlington 20-inch line he and Floyd Denmon, Sarepta field and section foreman, found starting the heavy plow-point scraper and the lighter plug hard to accomplish by jacking or by bumping them into the line.

Both the jacking and bumping methods have been normally satisfactory on smaller lines, but the difficulty of starting the heavier cleaners in large pipe suggested the use of truck and winch line, of necessity already in place, as a means of performing this initial operation more quickly and easily. Mr. Corwine designed a pulley and cap arrangement that can be used with the winch line without moving the truck which has been previously spotted to raise the pipe.

The "cap jack" was made from junk material on hand. It consists of a 14-inch length of pipe of sufficient diameter to slip over the tail piece of the cleaner, a flat piece of iron to form a cap over one end, two pieces of flat iron to serve as pulley bearings, and a six-inch pulley wheel taken from an old, discarded block.

The nose of the scraper is put into the end of the pipe and the cap is placed over the back end of the scrapper core. A chain is wrapped around the pipe in line with the block on the "A" frame of the truck and a snatch block is hooked into the chain. The winch line is then threaded through the block, passed down the top of the pipe line, over the pulley wheel on the cap jack, and back under the pipe to a point about three feet from the cap where it is tied around the pipe.

The truck driver then reels in his winch line, pulling the cleaner into the pipe, after which the line is removed and the cap jack lifted off. In this manner the plug is inserted in the line well beyond the end of the pipe and is ready for the truck to lower the pipe for it to be sleeved, the entire operation taking not more than five minutes.

Cap jacks of two sizes were made for use on the Webster-Sterlington cleaning job: one for the scraper and one for the plug. Each was approximately 21 inches in overall length.

—*United Gas Log*, October, 1944

Gas Burner Demand

A RECENT newspaper item reports that dealers in lighting fixtures in Washington report a brisk demand for old-fashioned butterfly gas burners. Because of the congestion property owners are attempting to recondition abandoned unwired houses that are piped with gas. It is impossible to wire the houses for electricity because copper for civilian use is unobtainable. Gas burners, according to the light fixture dealers, are equally as hard to find.

New Rules for A. G. A. Safety Merit Award

NEW regulations extending the effectiveness of the Safety Merit Award, for safe operations in the gas industry have been approved by the A. G. A. Executive Board upon recommendation of the Accident Prevention Committee.

Formerly, the Merit Award certificate was available to any member gas company, gas division, department or unit which operated for one million consecutive man-hours without a disabling injury accident. Under the new regulations, this certificate will continue to be available to any company or unit having 100 or more employees.

In addition, for member companies having less than 100 gas employees, a similar certificate will be awarded to each company which has operated 500,000 consecutive man-hours without a disabling injury accident. This new certificate is available only to an entire gas company or to the entire gas division of a combination company.

Charles F. Turner Is Fire Victim

Charles F. Turner

CHARLES F. TURNER, chief chemist of The East Ohio Gas Company and immediate past chairman of the Technical Section of the American Gas Association and immediate past chairman of the Technical Section of the American Gas Association, was a victim of the Cleveland fire on October 20.

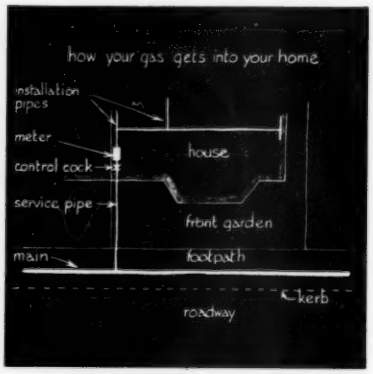
One of the most respected and best-loved engineers in the gas industry, Mr. Turner's passing was a great shock to the industry. Only two weeks before, at the October 4 meeting of the Technical Section's Managing Committee, he had been honored by his associates for his outstanding record of achievement during his administration, notably in connection with the A. G. A. reorganization, and for his many contributions to Association work through the years. At that time, L. E. Knowlton, incoming Section chairman, presented Mr. Turner with an engraved pen and pencil set.

A graduate of the University of Michigan chemical engineering, in 1920, Mr. Turner joined The East Ohio Gas Company immediately thereafter as Laboratory assistant. Later he was appointed chemist and then chief chemist.

In the early 1920's Mr. Turner became interested in protection of buried steel pipe and became a member of the Pipe Coatings and Corrosion Subcommittee of the A. G. A Distribution Committee. His work in pipe corrosion brought him in intimate contact with distribution system problems, and he also gained valuable experience in connection with valuation work on East Ohio's pipe line system.

In recent years, he has been in close touch with gas production and transmission problems, and has been actively identified with many Association projects. Mr. Turner had served as chairman of the Distribution Committee and was 1943-1944 chairman of the A. G. A. Technical Section.

Effective Textbook Tells Story of Gas



Blackboard diagram

THE story of coal gas manufacture is told in strikingly simple and effective style in a new book entitled "Gas—What It Is—What It Does" compiled and published by the British Commercial Gas Association. Designed as a basic textbook for use of teachers, it was written by a teacher who obviously had in mind the problems that beset them. The subject is developed for those who wish to devote a series of lessons to an interesting and instructive branch of both elementary science and citizenship.

It tells the story of gas from coal mine to burner in logical sequence in twelve lessons. Each lesson is complete in itself and covers the elementary essential aspects of the subject. A novel and useful feature is the numerous white-on-black illustrations which serve as guides for blackboard diagrams.

Accompanying each lesson is a sheet of data and more advanced information intended only for teachers but which, if necessary, could be given to older pupils.

U-1, Utilities

THE War Production Board on November 15 removed restrictions on purchases by power, gas and water utilities of surplus war materials and in addition amended its regulation to permit more general use of copper tubing for underground gas service lines. It also removed restrictions on the length of extension of gas and central steam heating service.

Customer Preference Shown in Surveys

A number of recent customer preference surveys show strains in the wind. One on postwar residential heating conducted by "Practical Builder," a Chicago publication, polled 5,000 building contractors in 29 states. Gas turned out to be the favorite fuel in all sections of the country except New England where oil has the edge. The answers to other questions stress the fact that the builder is the key man in the selection of the heating plant, more so than the architect, the consumer or the heating contractor. Forced air is largely preferred although in California gravity warm air is a close second.

A reader survey by "House and Garden" reveals that 45 out of 100 will build or buy new homes after the war. The average house will have 7.5 rooms to cost $12,928. This is evidently a "class" group. Only 8 per cent are considering pre-fabs; 54 per cent want traditional designs; nearly 40 per cent are thinking of radiant heat, and 62 per cent want air cooling; 30 per cent now have gas for heating, and 35 per cent want it in their new homes. All other heating fuels slip a bit except electricity which goes from nothing to 3 per cent. For cooking fuel it is gas that slips—74 per cent use gas now and 44 per cent plan to continue. This compares with 23 per cent who now use electricity and 47 per cent who want it in the new home. *—P.C.G.A. News Letter.*

New Pipeline to Serve Pacific Coast

PLANS of three California utilities to build a 27¼-inch diameter, 1,000-mile gas pipeline from the Texas Panhandle to the Pacific Coast at a cost of $60,000,000 were disclosed last month when Pacific Gas & Electric Company of San Francisco filed a registration statement with the Securities & Exchange Commission preliminary to offering $115,000,000 of refunding bonds for sale. In San Francisco P. G. & E. revealed that its partners in the pipeline undertaking are Southern California Gas Company and Southern Counties Gas Company, Los Angeles subsidiaries of Pacific Lighting Corporation.

The War Production Board already has been asked for equipment priorities, and construction of the pipeline is scheduled to start in 1945 if the Federal Power Commission grants permission and if the SEC approves the financial setup. Financing plans call for a separate company which will sell between $40,000,000 and $50,000,000 of bonds. The 27¼-inch pipeline will stretch from the vast Hugoton Field in the Texas Panhandle to the natural underground gas storage pool at LaGoleta, near Santa Barbara, California. Hugoton Field is owned by Phillips Petroleum Corporation of Bartlesville, Oklahoma.

The pipeline, which will be designed for a daily capacity of 300,000,000 cubic feet of gas, will follow generally the route of the Santa Fe Railroad.

Personal AND OTHERWISE

Drake Appointed to Personnel Post

M. M. Drake

MARSHALL M. DRAKE has been appointed assistant director of personnel of the Philadelphia Company and subsidiary companies, Pittsburgh, Pa., and for the Trustees, Pittsburgh Railways and Pittsburgh Motor Coach Companies.

A graduate of Penn-State College, Mr. Drake entered the service of the Pittsburgh Railways Company in 1926 as a research engineer, later becoming superintendent and operating instruction and employment manager, Philadelphia Company and subsidiary companies, which position he held until his recent promotion.

In his new position he will be in charge of employment training, veterans' re-employment, employee information, wage and salary stabilization and industrial relations research activities. He is a director of the Pittsburgh Personnel Association, and lives in Mount Lebanon.

Appointed Secretary of Residential Section

F. W. Williams

F. W. WILLIAMS has been appointed secretary of the Residential Gas Section of the American Gas Association effective November 1, 1944, according to an announcement by Alexander Forward, managing director of the Association. He succeeds John W. West, Jr., who has been secretary since January 1, 1926. Mr. West, as assistant managing director, will continue his present administrative responsibilities in connection with the operation of the Section.

Mr. Williams has been assistant secretary of the Residential Gas Section since September 1940. He joined the American Gas Association staff in 1937 as assistant director of the Home Appliance Planning Bureau in which capacity he helped direct the A. G. A. National All-Gas Home Architects' and Builders' Contest. He has conducted many of the Residential Section's activities, including the CP Ranger Club.

Prior to joining the A. G. A. staff, Mr. Williams was associated with The Brooklyn Union Gas Company as new business representative specializing in architects' and builders' contacts.

Utility Vice-President

William J. Foster, Jr.

WILLIAM J. FOSTER, JR., of Ithaca, New York has been named a vice-president of the New York State Electric & Gas Corporation, succeeding Gray A. Strain, also of Ithaca, who retired September 25, Ralph D. Jennison, president, announces.

Mr. Foster has a background of 26 years in making or supervising many economic surveys, depreciation, inventory and valuation studies, rate analyses and design and development of rates for many utilities throughout the United States and Canada.

Employed in a consulting capacity from 1922 to 1942, he became directly associated with the Ithaca utility about two years ago as an advisor on rates and rate problems, cost accounting and depreciation matters. As vice-president he will have responsibility for rate and regulatory commission matters, as well as work in fields of cost accounting and depreciation.

He is a graduate of Amherst College.

B. T. Franck Cited

BERNARD T. FRANCK, vice-president, Milwaukee Gas Light Co., has received the 1944 distinguished service award of Milwaukee Post No. 1 of the American Legion for his record as executive chairman of the Milwaukee County War Savings Committee, which he headed for two years, and for his activities in recruiting vacationists to work in farm communities where manpower was short.

Elected President of Arkansas Natural Gas

D. W. Harris

D. W. HARRIS, of Shreveport, La., was elected president of the Arkansas Natural Gas Corp., October 20, at the annual meeting of directors in New York.

Mr. Harris has served as vice-president and general manager of the company and its subsidiaries, Arkansas Fuel Oil Co., Arkansas Louisiana Gas Co., and Arkansas Pipeline Co., since 1928. Under Mr. Harris' management the company has had a steady growth and is one of the leading oil and natural gas properties in the South. It pioneered in the discovery and development of the vast east Texas oil field and the Rodessa, Sligo, and Lincoln Parish, La., fields.

In the new Carthage, Texas field, which the industry expects to be one of the largest natural gas fields in the world, the company has 22,000 acres of proven and potential holdings. Extensive acreage in the best oil and gas areas of Mississippi and Alabama are also held by the company.

The new president of the Arkansas Natural Corp. has held several official positions with Cities Service Co., and its subsidiaries in Denver, Bartlesville, Okla., and New York. He is a director of the American Gas Association, a member of the Bankers Club of New York and has been active in affairs of the oil and gas industry.

Louis Yetter Retires; Stanton Appointed

ANNOUNCEMENT has been made by the Public Service Electric and Gas Company, Newark, New Jersey of changes in the organization of the Atlantic City Gas Company, Atlantic City, New Jersey—a Public Service property.

Louis N. Yetter, commercial manager since 1910 who has retired on pension, is succeeded by Vernon F. Stanton.

Raymond H. Young, office supervisor, becomes assistant commercial manager while Hugh L. Wathen, a commercial sales representative, moves up to the post of appliance sales manager.

Mr. Stanton, who started with Public Service as a clerk in the Montclair Commercial office in 1919, has been commercial manager for the company at Morristown.

Mr. Young has been office supervisor of the Atlantic City Gas Company since 1935.

Starting with the Atlantic City Gas Company as a gas appliance salesman in 1927, Mr. Wathen's next step was to commercial sales representative in 1931, a position he held until his promotion to appliance sales manager.

Rogers Heads Accident Prevention Committee

W. T. Rogers

W. T. ROGERS of the Industrial Relations Department of Ebasco Services Inc., New York, N. Y., has been appointed chairman of the Accident Prevention Committee of the American Gas Association, it has been announced by J French Robinson, president of the Association. This committee is the clearing house of all Association matters pertaining to safety in the gas industry, including the award of McCarter and other accident prevention awards.

An expert in personnel and safety work, Mr. Rogers is a member of the A. G. A. Personnel Committee and of the following: Accident Prevention Committee, Edison Electric Institute; Safety Committee, American Institute of Electrical Engineers; Executive Committee, Public Utilities Section of the National Safety Council. He is also a member of the American Society of Safety Engineers and the Society of American Military Engineers.

A graduate of the Polytechnic Institute of Brooklyn and the New York University School of Business Administration, Mr. Rogers also specialized in advanced industrial relations studies at the Columbia University School of Business. Prior to association with Ebasco, he was engaged in engineering and personnel work for Consolidated Edison Co. of New York, Inc. His earlier experience included organization of personnel activities in the New York & Queens Electric Light & Power Company.

Nunlist Advanced

F. J. Nunlist

THE L. J. Mueller Furnace Company has just announced the appointment of Frank J. Nunlist as chief engineer. Mr. Nunlist has been active in the heating and air conditioning industry since 1931 and has been with the Mueller Furnace Company since 1940. For approximately the past year, he has served as acting chief engineer.

As a member of the American Society of Heating and Ventilating Engineers, he is on the Code Committee for rating heavy-duty furnaces, as well as the Technical Committee for the study of National Warm Air Heating and Air Conditioning Association installation codes.

Mr. Nunlist is also an industry panel member of the War Labor Board, and a member of the Engineering Society of Milwaukee.

Ruud Elects Officers

R. H. Lewis

NEW officers of the Ruud Manufacturing Company, Pittsburgh, Pa., makers of gas water heaters, are R. H. Lewis, president and general manager, succeeding A. P. Brill who has been made chairman of the board; J. H. Sorg, vice-president and counsel; M. M. Scott, vice-president in charge of sales and advertising; K. M. Clark, secretary and treasurer; and J. K. Roth, assistant secretary and assistant treasurer.

Members of the new board of directors are A. P. Brill, chairman, R. H. Lewis, J. H. Sorg, K. M. Clark, M. M. Scott, M. G. Hulme, W. W. McVay, W. R. Daley and M. W. Taylor.

The company, reports President Lewis, has completed all its war contracts and has reconverted its Kalamazoo, Mich., and Toronto, Ont., plants to the manufacture of gas water heaters within the limits imposed by the War Production Board and with future expansion of production dependent on WPB rules and restrictions.

C. V. Sorenson Honored

C. V. Sorenson

AT a meeting of the Residential Gas Section Managing Committee held in Chicago, October 31, C. V. Sorenson, chairman of the Section for the year 1943-1944 was honored for his effective leadership of the Section and for his selfless efforts in pioneering the Coordinated Gas Kitchen Program.

J. H. Warden, incoming chairman of the Section, presented to Mr. Sorenson, a black onyx desk set as a token of the industry's appreciation for Mr. Sorenson's splendid achievements. In his presentation address, Mr. Warden stated that Mr. Sorenson, as a result of travelling many thousands of miles throughout the country, has built a firm foundation for the Coordinated Gas Kitchen Program and that his efforts have contributed materially to the program's success.

J. W. West, assistant managing director, A. G. A., paid tribute to Mr. Sorenson and stated that the Association has been very fortunate in obtaining men of Mr. Sorenson's caliber to effectuate and advance the Association's work for the common good of the gas industry.

Southwestern Development Company Makes Executive Personnel Changes

P. C. SPENCER, of New York, has been elected president of the Southwestern Development Company, succeeding N. K. Moody who has been granted a leave of absence for the purpose of regaining his health. Mr. Moody's resignation also entailed organizational changes in subsidiary companies as follows:

R. E. Wertz is now president and general manager of Amarillo Oil Company. Mr. Wertz, who is a past chairman of the American Gas Association's Natural Gas Department, continues as president of the Amarillo Gas Company.

H. R. Budke, formerly general manager of the Amarillo Gas Company, was named vice-president and general manager and also was elected a member of the board of directors. In addition, Mr. Budke was selected as president and a director of Panhandle Pipe Line Company.

E. C. Wagner has become president and a director of Red River Gas Company and also is vice-president and chief engineer of Amarillo Oil and affiliated companies.

R. F. Hinchey, vice-president and general manager of West Texas Gas Company, was elected to the board of directors.

W. W. Rusk has been promoted to the position of vice-president of Amarillo Oil Company. At the same time, Mr. Rusk was elected president of Dalhart Gas Company and Clayton Gas Company.

A. L. Moore, formerly with Amarillo Gas Company, was selected as vice-president and manager of Dalhart Gas Company to succeed O. E. Duggins who resigned. Mr. Moore was also named vice-president and manager of Clayton Gas Company.

Mr. Spencer, new head of Southwestern Development, the parent company, received the additional appointment of president of Canadian River Gas Company. R. A. Ford, general manager of the latter company, was elected to the board of directors.

J. R. Allen is assistant secretary and assistant treasurer of both Amarillo Gas Company and Panhandle Pipe Line Company. F. E. Miller has become assistant secretary of these companies.

Personnel Committee Chairman Named

Gordon M. Peterson

GORDON M. PETERSON, assistant to the general commercial manager, Public Service Electric and Gas Co., Newark, N. J., has been appointed chairman of the Personnel Committee of the American Gas Association, it has been announced by J French Robinson, president of the Association.

Engaged in a continuing study of industrial relations problems, the Personnel Committee is now in its ninth year as an Association activity.

In addition to making important war contributions through manpower studies, the committee is now devoting particular attention to the problems of returning servicemen.

The new committee chairman, Mr. Peterson, is a recognized authority on industrial relations, having been active for many years in personnel committee work of national associations in both gas and electric utility industries. A graduate of Princeton University in 1925, he joined the Public Service Electric and Gas Company immediately after completing his formal education. For several years, as director of educational work, he was in charge of the company's employee training program. He was appointed to his present position in 1940.

Appointed Home Service Committee Chairman

Colleen Fowler

APPOINTMENT of Colleen Fowler of Kansas City, Mo., as chairman of the Home Service Committee of the American Gas Association has been announced by J. H. Warden, chairman of the Association's Residential Gas Section.

For the last seven years, Miss Fowler has been Director of Home Service for the Kansas City Gas Company. Prior to that time she was a Director of Home Service for the Kansas Electric Power Company.

Miss Fowler entered the business field with a background of twelve years' teaching experience. She taught public speaking and dramatic art in the Dodge City, Kansas High School for one year. For eleven years, she taught Home Economics in the Junior College and Senior High School in Fort Scott, Kansas.

Miss Fowler took her undergraduate work at the College of Emporia and spent a year in the graduate school of the University of Alabama.

In 1940, she was Home Service Chairman for the Midwest Regional Gas Sales Conference and through her other Home Service activities is well known in the gas industry.

New Utilization Department Head

CREATION of a department of gas utilization and appointment of Larry L. Ladewig as its head were announced last month by Frank C. Smith, president of the Houston Natural Gas Company, Houston, Texas. Function of the new department will be to conduct studies and investigate the properties of existing gas equipment in residential, commercial and industrial fields.

A graduate engineer of Texas College of Arts and Industries, Mr. Ladewig has been associated with Houston Natural for more than five years.

Lawder Resigns Office in Heating Council

ROBERT LAWDER of the Consolidated Edison Company of New York Inc. has resigned as secretary-treasurer of the Metropolitan House Heating and Air Conditioning Council, it was announced at the council's regular monthly meeting held November 15 in New York. His resignation takes effect December 1 at which time he will take up new duties with the personalized heating division of Minneapolis-Honeywell Regulator Company.

Edward J. Gerridge, The Brooklyn Union Gas Company, was elected to serve out the balance of Mr. Lawder's term of office.

Adams Wins McCarter Medal and War Bond

GEORGE F. ADAMS of the Minneapolis Gas Light Company, Minneapolis, Minn., received a McCarter medal and certificate October 31 for performing an outstanding act of life saving by utilizing the Schafer prone pressure method of resuscitation. The award was presented by Harry K. Wrench, company president, in the presence of 200 of Mr. Adams' fellow workers, supervisors and officers of the Safety Committee.

As an additional reward for his conspicuous performance of duty the company presented Mr. Adams with a $100.00 War Bond.

McCarter medals are awarded by the American Gas Association upon recommendation of the Accident Prevention Committee. The donor is Thomas N. McCarter, chairman of the board of the Public Service Electric & Gas Co., Newark.

Hunt Honored for Life Saving

VERNON A. HUNT of the Consolidated Gas Electric Light and Power Company of Baltimore was honored October 24 when he received a McCarter medal and certificate at an impressive company ceremony attended by more than 200 employees. H. R. Cook, Jr., vice-president in charge of gas operations, made the presentation and paid tribute to Mr. Hunt for the life-saving act for which he was honored.

The medal was awarded by the American Gas Association upon the recommendation of the Accident Prevention Committee.

Schryer to Mueller

APPOINTMENT of Frank Schryer as plant superintendent has been announced by The L. J. Mueller Furnace Company.

Mr. Schryer joins the Mueller organization with considerable background experience in manufacturing plant management. He has served in plant managerial capacities for such companies as Cribben & Sexton Company, Chicago, Lindemann-Hoverson Stove Company, Milwaukee, General Edison Electric Appliance Company, Chicago, and for nine years was superintendent of the Hamilton, Ontario, plant of the International Harvester Company.

Joins Ad Agency

W. Stanley Redpath

W. S. REDPATH, sales promotion manager of the Equitable Gas Company, Pittsburgh, has joined Ketchum, MacLeod and Grove, Inc., Pittsburgh advertising agency, as account executive.

Mr. Redpath was graduated from Queens University, Belfast, Ireland, with a degree in mechanical engineering. He joined the sales staff of Westinghouse Electric and Manufacturing Company in 1925 and left in 1928 to engage in sales promotion for the Duquesne Light Company, Pittsburgh. He joined Equitable Gas in 1939.

S. W. Murphy Dies

SAMUEL WILSON MURPHY, president of the Electric Bond and Share Company, the nation's largest utilities' holding company, died of a heart attack November 19 at the age of 52.

Mr. Murphy became an attorney for the Electric Bond and Share Company in 1923 and served as vice-president from 1937 to 1941, when he was elected president.

A.G.A. Organizes Midwest Personnel Conference

REPRESENTATIVES of gas companies met at Kansas City, Missouri, October 25, for the purpose of organizing an American Gas Association Midwest Personnel Conference covering the states of Iowa, Nebraska, Kansas, Missouri, and Arkansas.

Purpose of the conference is to give gas companies an opportunity to discuss industrial relations problems, review and exchange information on practices, study postwar personnel planning, including the handling of returning veterans, etc. No formal programs are planned and the meetings will be devoted to discussion of the more vital personnel matters in light of actual experience of the gas companies represented. The conference also will be available to handle any necessary regional personnel matter.

Kurwin R. Boyes, secretary, American Gas Association, informed the meeting that the new group was being formed at the request of member companies and that representatives of all gas companies in the five state area will be welcome regardless of membership in the Association.

M. V. Cousins, chairman, A. G. A. Southwest Personnel Conference, outlined some of the benefits that have resulted from a similar group in that area.

Colonel Earp and Captain Wendell of the Missouri State Selective Service Headquarters were guest speakers and gave an interpretation of the G. I. Bill of Rights and how the State Selective Service Systems will aid both the employer and the returning veteran.

R. B. Harkins, personnel director, Panhandle Eastern Pipe Line Company, Kansas City, Mo., was chosen chairman of the conference for the ensuing year.

CONVENTION CALENDAR

DECEMBER

Dec. 1 **Sales Personnel Training Conference**
New York, N. Y.

4 **Sales Personnel Training Conference**
Pittsburgh, Pa.

6 **Sales Personnel Training Conference**
Chicago, Ill.

8 **Sales Personnel Training Conference**
Kansas City, Mo.

8 **American Standards Association Annual Meeting**
Hotel Roosevelt, New York, N. Y.

11 **Sales Personnel Training Conference**
Dallas, Texas

13 **New England Gas Association, Safety Conference**
Boston, Mass.

14 **Sales Personnel Training Conference**
Atlanta, Ga.

15 **New York-New Jersey Regional Gas Sales Managers' Round Table**
New York, N. Y.

20 **Metropolitan Gas House Heating and Winter Air Conditioning Council**
A. G. A. Headquarters, New York, N. Y.

1945

JANUARY

Jan. 10 **New England Gas Association, Operating Division**
Boston, Mass.

FEBRUARY

Feb. 8-10 **Domestic Gas Research Conference**
Cleveland, Ohio

14-16 **American Management Association**
Palmer House, Chicago, Ill.

MARCH

Mar. 7-9 **West Coast Domestic Gas Research Conference**
Los Angeles, Calif.

29-30 **A. G. A. Industrial & Commercial Gas Conference**
Toledo, Ohio

APRIL

Apr. 4-6 **A. G. A. Distribution Conference**
Stevens Hotel, Chicago, Ill.

4-6 **A. G. A. Motor Vehicles Conference**
Stevens Hotel, Chicago, Ill.

(wk.) 9 **Midwest Gas Association**
St. Paul or Omaha

MAY

May 7-8 **A. G. A. Natural Gas Department, Annual Meeting**
Hotel Gibson, Cincinnati, Ohio

7-11 **National Fire Protection Association, Annual Meeting**
Palmer House, Chicago, Ill.

JUNE

June 4-6 **A. G. A. Joint Gas Production and Chemical Conference**
Hotel Pennsylvania, New York, N. Y.

19-22 **Canadian Gas Association, Victory Convention**
Murray Bay, Quebec

Gas Measurement Short Course

THE General Committee of the Southwestern Gas Measurement Short Course met in Dallas, Texas, on November 10, to make plans for the 1945 course.

Earl Kightlinger, Arkansas Louisiana Gas Company, Shreveport, chairman of the Committee, announced the tentative dates set for the 1945 school as April 17, 18 and 19. During the Meeting, C. A. Gibson, Cities Service Gas Company, Bartlesville, was elected chairman of the Program Committee; R. M. Scofield, Lone Star Gas Company, Dallas, was elected chairman of the Exhibits Committee; Kate A. Niblack, Oklahoma Utilities Association, Oklahoma City, Oklahoma, was elected chairman of the Registration and Publicity Committee. Dean W. H. Carson, College of Engineering, University of Oklahoma, Norman, who is chairman of the Executive Committee of the course, was elected chairman of the Banquet, Entertainment and Local Arrangements Committee. W. H. Woods, Gulf Oil Corporation, Houston, chairman of the Committee for the Study of Practical Methods, was continued in that position.

William D. Yale, The Texas Company, Houston, was appointed to serve on the General Committee to take the place of Max K. Watson, Canadian River Gas Company, Amarillo, who will become a member of the Executive Committee.

George H. Stang Dies

GEORGE H. STANG, director, secretary and assistant treasurer of the Brooklyn Borough Gas Company, Coney Island, N. Y., died in November.

Mr. Stang was widely known and respected in the gas industry. He joined Brooklyn Borough on May 8, 1913 and was appointed to his last position in 1929. He was a veteran of World War I in which he served with distinction, receiving a silver star and a citation for bravery.

At a special meeting, the board of directors, elected Samuel Newman assistant treasurer and a director, and named John F. Droge to succeed Mr. Stang as secretary. Mr. Newman, who joined the company in 1903, will continue to serve as auditor. Mr. Droge, who is also purchasing agent, has been associated with the company since 1914.

Natural Gas in Europe

FOREIGN COMMERCE WEEKLY reports that many European countries are developing natural gas resources in an attempt to relieve the fuel situation and provide raw materials for industry. Rumania and Poland formerly were the only important natural gas producers in Europe, but in recent years Hungary, Austria, Germany and Italy have developed a reasonably large production, while several other countries have made some progress. It is believed that Europe has many still undeveloped sources of natural gas.

Wet Cell Battery Sheds New "Light" on Meter Reading

By T. J. O'NEILL

Philadelphia Electric Company
Philadelphia, Pa.

ATTENTION was first directed to the wet cell battery as a result of the chaotic conditions which arose in the battery market shortly after this country's entry into the present world war. At that time, meter readers were equipped with a prefocused flashlight using two dry cells commonly known as No. 1050 industrial type cells. These industrial type cells had been used for several years because exhaustive field tests with both commercial and industrial cells had proved conclusively that the latter product was superior for meter reading use in both economy and efficiency.

These batteries were tested upon delivery and were required to conform to certain specifications which defined the diameter and height of the battery, the type of casing, terminals and composition of the contents. In addition, they were tested on a voltmeter having a resistance of 100 ohms per volt. Under this test the battery was required to show a minimum reading of 1.50 volts and could not exceed a maximum reading of 1.60 volts. The minimum amount of discharge time required was 900 minutes per cycle under meter reading test. These specifications were acceptable to the manufacturers and they agreed to conform accordingly thereto. The result was maximum efficiency and economy.

War Curtailment

However, when the war broke out the manufacture of batteries for commercial use was curtailed in favor of government requirements. Certain manufacturers discontinued their products entirely. Material was extremely difficult to obtain, substitutes were used and as a result rigid specifications had to be abandoned. The manufacturers' representative warned that industrial type cells would very soon disappear entirely from the market and it was then that we became concerned over the prospects for the future in meter reading illumination. Investigations and studies were made into other means of illumination and it was believed that some thought should be given to wet cell batteries.

Previous experience with this product had proved unsatisfactory. Considerable objections were encountered and it was found that most of these objections were based purely on prejudice, in many cases emanating from misinformed sources.

However, a sample of the product was requested from the manufacturer. This sample proved far superior to any previous wet cells submitted and it was evident that definite improvements had been made in the brilliance and quality of the light. This sample was immediately placed in the field as an experiment and carefully observed for a period of thirty days during which time it was used by several different readers who were given the opportunity to express their comments on its advantages and disadvantages. At the close of this trial period, the comments were collected and the consensus was in favor of its adoption.

Field Experiment

To be doubly sure that the conclusion was correct it was decided to purchase only enough batteries to equip one district office employing ten meter readers. Twenty-four batteries and two six gang chargers were obtained. It was anticipated that fresh batteries might have to be issued daily and, therefore, two for each man plus four spares were ordered, which it was believed would serve in case of breakage or damage.

Some of the questions which came up were corrosion, breakage, charging spillage, leakage, freezing and spoilage of clothing. The answers to these questions, gleaned from observation over a five months' trial period, follow.

Care of the storage battery is simple, and there is practically no danger of corrosion under proper care. The only possibility of corrosion in the flashlight case would be as a result of the escape of a few drops of electrolyte caused by careless overfilling or a cracked cell. No gas escapes while the battery is discharging in use, thus there are no corrosive fumes or gas mistakenly attributed to storage cells.

The battery case is made of Lucite. It is strong, not easily broken; dropping may crack the base but probably only if it happens to hit material like concrete or brick. While in the flashlight case, it stands little danger of harm. It is transparent, making it easy to check on the amount of saturation. It is impervious to battery electrolyte. It will burn but not easily and is much less inflammable than heavy cardboard or rubber. It is not noticeably affected by heat or cold. In warm temperature the liquid evaporates a little faster and it will not freeze if it contains a fair amount of charge. The size and weight of the storage battery as compared to a set of dry cells is approximately the same. The light curve on a wet cell starts at a slightly lower peak but drops off less rapidly in heavy use than does the dry cell. The cell must be in good condition and freshly charged for best light.

A prefocused or fixed focus flashlight is preferred for meter reading work. In comparison to the screw type base, which has always been used for flashlights in the past, this lamp has a flange base and is set into the flashlight case in a fixed setting so that the light is permanently focused on one straight beam. A case using the screw base lamp cannot be used for fixed focus bulbs. However, lamps are available in both screw type and flange base for use in connection with the wet cell battery.

The recommended bulb for prefocused flashlight cases is a .600 milliampere 1.93 volt bulb known as a P.R.8. This bulb gives a brilliant white light. It obviously consumes considerably more current because of the increased wattage, however, since the batteries are changed daily, that is, recharged every other day, current consumption is no problem, and the readers should always have a good light.

Bulb Selection

In order to get the best results obtainable it is very necessary to use the proper bulb and the following information is furnished as a guide.

The light volume and incandescence of miniature lamps is controlled largely by the wattage, that is, amount of amperes times voltage. One dry cell (primary cell) irrespective of size is rated at 1½ volts. A storage cell similarly is rated 2.2, more commonly referred to as 2 volts. The most popular lamps, either screw type or flange base, used with two dry cells are rated at 2.5 volts, .3 ampere draw. To approximate the light volume and discharge time of two size D cells, using 2.5 volt 3 ampere bulb, a Mazda Lamp No. 195 has been designed for use with the storage battery. It is rated at 1.93 volts .45 ampere draw.

Observation of the five months' trial period in the trial District conclusively proved

that the entire meter reading force should be equipped, and in addition disclosed the following advantages:

(a) The illumination with the recommended type bulb was far superior for a longer period than any other combination available.

(b) Since the product carries a guarantee of six (6) months we could at least be assured of good lighting for that period and during an emergency a provision of this kind cannot be ignored.

(c) While the price of dry cells had increased slightly, our costs were rising rapidly due to the poor quality of the product. The adoption of the wet cell offered an excellent opportunity to effect economies in operation and maintain the costs within the estimated budget.

(d) Here also was an opportunity to contribute toward the war effort in the conservation of vitally needed manpower and critical material. The dry cell manufacturers absorbed in government work had a problem to meet requirements and naturally any release in commercial demands permitted them a greater concentration on government work.

Some of the batteries purchased on the original order in September of 1942 are still giving a limited amount of service. A tabulation discloses that the average wet cell will last at least nine months under heavy usage before showing signs of deterioration.

In view of the fact that the results of the wet cell operation have proved eminently successful and a very satisfactory substitute, it is doubtful whether we will return to dry cells when the war is over.

Learn To Say "Please"

• A letter from ALBERT J. FRANCK, special accountant, Queens Borough Gas and Electric Company, Far Rockaway, N. Y.

THE short column on page 419 of the October, 1944 issue of the A. G. A. MONTHLY, on an eight-point plan for better employer-employee relations, is an intimation that the the fine art of reconciling employer to employee, and vice versa, has not been abandoned after all.

I have often wondered just what it takes to improve relations between employer and employee; to moderate the turbulence and mutual distrust that seem to have grown up in so many instances in recent years. I think the initiative has to be taken by the executives if things are to be somewhat more Utopian: it is a case of "noblesse oblige." So, these would be *my* "eight points" for improving employer-employee relationships:

I—Learn to say "please." Common courtesy is not only inexpensive, but it is a credit to him who practices it and a compliment to the recipient of it.

II—Learn to "command" with questions. People who work for wages are not dogs to be ordered to "fetch it," "lie down," "give me paw" or "beg." They like to feel that they are *assisting*. "Will you do this for me, please?" gets ever so much more cooperation than a cold and curt "do thus-and-so" in the most rudely abrupt imperative manner, and it leaves an agreeable impression, rather than resentment.

III—Give people time to change from one operation to another. An order to drop one undertaking suddenly in the very middle and to embark on something else produces a shock. It effects a variety of frustration. People need time to adjust themselves and a good supervisor will ease the transition by the exercise of tact.

IV—People have feelings. Even the people who mop up the offices at night respond to courtesy and friendliness. It never hurts a "big shot" to drop around once in a while at night to see how the boys and girls on the Cinderella shift are doing.

V—In putting new procedures into effect, there must be careful and thorough preparation of the affected personnel for any change. The employees must be taken into the plans beforehand, and the supervisors must stand by and work *with* them hour after hour and day after day, "sharing the agony" until the "bugs" are out and the routine is smooth again. It is the side by side vanquishing of trouble that brings employers and employees into the closest and best of relationships. For an official to be aloof can hardly be called a mistake: it is an offense.

VI—It should be remembered that wage slaves like to live, too. They have homes to go to, families to live with, and interests ranging from gardening to golf, and mah jongg to the movies. Therefore, they should not be subjected to unreasonable impositions that restrict their leisure, or to the operation of wage policies that make life a dead heat race with the sheriff. The utility business has less justification than almost any other for illiberality in respect of wages and hours. It is not right invariably to pass on to the rate-payers all the benefits of the efficiencies which labor and management together produce. Utilities are, after all, entitled to their costs and a fair return on investment, and I have never yet, in almost thirty-three years of contact with the utility business, heard of a utility being denounced by a regulatory body for its generosity to the "*common* help."

VII—Be just. Favoritism and nepotism are contemptible. It is my experience, too, that nine in ten working people are less concerned with the actual amount of their week's pay than with how it stacks up against the pay of others in the same outfit. One of the worst notions I know of is the idea that a woman in a given job is not just as valuable as a man in that same job. Another is the notion that, for a woman, being married is a disability in business. Justice and breadth of mind are essential.

VIII—Learn to say "thank you."

Internal Auditing Book Published

A SECOND volume entitled "Internal Auditing—Philosophy and Practice" was recently published by The Institute of Internal Auditors. Comprising the most important papers and addresses presented during the 1942-1943 season of the institute, the book further illustrates the broad, practical effectiveness of the science of internal auditing. It is edited by Charles J. Fue, general auditor of The Brooklyn Union Gas Company.

Cooperating of the Internal Auditor with the Public Accountant, Internal Auditing's Relation to Management, and War and Postwar Problems are among the more salient aspects of internal auditing discussed in this volume.

Natural Gas Course Wins Friends

THE Natural Gas Course conducted by the extension division of the University of Kansas under the sponsorship of the American Gas Association continues to win friends and influence the course of many gas men's lives. It has proven a boon to M. E. Malone of Kalamazoo, Michigan, who wrote Professor C. M. Young, who conducts the course, on November 8 as follows:

"The value of a course of this kind, and the test of its completeness, can only be found when the course is completed, and the material presented being utilized in everyday working conditions.

"I am very happy to report that I have found the course exceedingly helpful, and feel that as each day goes by, the lessons learned will more clearly demonstrate the value of the course.

"I might add that a great many of my associates have been surprised to find that there is such a course, and it would seem to me that the American Gas Association would do well to advertise the course more extensively, so that more of its junior members could have the benefits that would be derived from these studies.

"I wish to thank you very much for your helpful reviewal of my lessons and for the sympathetic manner in which you have borne with me in my long period of trying to complete the course.

"I would be pleased to recommend the course to anyone, and if I can be of any help to you in supplying you with any information of a practical nature, which you may desire, I will be only too pleased to be of assistance."

General Sales and Advertising Policies for the Gas Industry

O. R. Doerr

THIS section of the report deals with subjects which in our industry are normally considered responsibilities of the sales and advertising subdivisions of each member unit. It deals in turn with:

1. Sales and Merchandising
2. Advertising
3. Servicing
4. Installment Purchase Financing
5. Training

Obviously, the number and importance of these subjects as activities with which the industry must concern itself much more intensively in the postwar period are such that it will not be possible to treat them herein in all of their phases. The purpose of the following statements, therefore, is to deal only with the policy aspects of each activity and to endeavor to enumerate some concrete recommendations.

It is hoped that this course of action may have a twofold result. First, that it will be accepted as an outline or suggested pattern for the guidance of Association section leaders and committees, now and in the transition period, in their endeavors to prepare our industry for its postwar responsibilities. Secondly, that it will be looked upon as a policy reference statement for all members to use in their individual efforts to get set for postwar operations.

In suggesting this use of the report, it is recognized that more detailed and intimate facts and policy statements are desirable if the material is to be of maximum assistance to individual companies. Of necessity, in trying to be "all things to all groups" many recommendations in the report are quite broad and general. Nevertheless, it is believed that much of value can be secured from it bv all branches of the industry.

The following pages deal separately with each of the five topics above enumerated.

SUB-COMMITTEE ON SALES POLICIES
O. R. DOERR, *Chairman*

• The last issue of the A. G. A. MONTHLY carried a valuable postwar study of domestic gas appliances conducted by the Pacific Coast Gas Association's Committee on Gas Industry Development, H. L. Masser, chairman. Herewith is presented an additional report of the same committee dealing with sales and advertising policies.

• Prepared by a subcommittee headed by O. R. Doerr, chairman, it is a noteworthy effort to crystallize the most advanced thinking in regard to an enlightened postwar sales and merchandising policy. Mr. Doerr, who is general sales manager of Pacific Gas and Electric Company, San Francisco, was recently elected president of the Pacific Coast Gas Association.

1. SALES AND MERCHANDISING POLICY

IT is recognized that any attempt to write a sales and merchandising policy that could be adopted universally by the industry would be doomed to failure. There are too many variables as to size and type of company as well as size and economic factors of the area served. Your committee's report is therefore confined to the broad, basic principles which all companies should consider in the development of any sales policy that is designed to meet the vigorous challenge of the postwar period.

If we are to hold our gains and advance the public acceptance and utilization of our product we must progressively promote all gas appliances and equipment. This is particularly important in view of an anticipated stepping up of competitive effort from other types of fuel.

Methods of Promotion

The direction of this aggressive promotion will depend largely upon many conditions in the area of service. It may require direct selling by the utility or a strenuous promotion through dealer outlets or a combination of both. Member companies will have to analyze their particular situation to determine the most effective method. To attain the maximum results, these promotions should be carried on through adequate and satisfactory outlets.

Irrespective of the method employed to give the proper emphasis to the promotion of appliance and equipment and to halt the inroads of competition, each member company should decide as early as practicable which plan is best suited to meet its conditions. Each utility should advise manufacturers, wholesalers and dealers of its determined course of action in order that these trade channels may complete their plans for the transition from war to peace.

In those instances where the utility decides upon a direct selling program, it is recommended that a policy be adopted which will permit dealers to participate on a profitable basis. The following items should be considered:

1. Profit margins
2. Financing
   (a) Length of terms
   (b) Down payments
   (c) Interest rates
3. Dealer participation in campaign planning
4. Trade-in-allowances
5. Guarantees

Home Economics

Serious consideration should be given by all utility companies to the use of home economists in sufficient numbers to provide reasonable coverage. A home economics program will tend to protect existing gas loads and will furnish an additional strong promotional medium to aid in the sale and proper utilization of gas appliances. It will also provide a means to help in the training of retail sales people.

Adequate Retail Outlets

To strengthen our channels of distribution, immediate attention should be given to the re-establishment of suitable and adequate appliance outlets to insure:

1. Full public access to utilization devices
2. Convenient locations of retail outlets, adequately stocked and sufficiently financed, to cope with the competition from other fuels and other industries

Research and Dealer Aids

The utility companies should undertake some investigation and research to determine where and how they can aid and assist retail outlets in the better performance of

their function in the distribution of gas appliances.

The utility companies, as leaders in the industry, should undertake studies and analyses of:

1. Population trends and shifts
2. Customer growth
3. Housing requirements
4. Appliance saturations and past sales records
5. Potential and early war markets
6. Availability of appliances and devices

Such information should be developed by trading areas and made available to trade allies for their guidance in the development of individual postwar plans. Prospect lists should be compiled and made available for dealer use.

The importance of selling in the postwar period cannot be over-emphasized. To develop the maximum effectiveness of dealer organizations, training and refresher courses for retail sales people should be provided. Any utility sales and merchandising policy that is adopted should make provision for the conduct of such courses under the leadership of the utility.

Selection of Lines

To safeguard the maintenance of and to develop an expansion of public acceptance through satisfied users, it is urged that member companies recommend and/or sell only A. G. A. approved appliances.

In considering the long range aspects of sales policy in the postwar period, consideration should be given to the advisability of standardizing lines and models. Such standardization in lieu of "special" models and demands for a variety of gadgets would permit more economical manufacture with a resultant lower cost to the customer. It would also allow manufacturers to more nearly gear their output to mass production methods. Of course, it is recognized that we cannot hope to compete with other types of appliances if we attempt to sell "stripped" models. The industry must keep pace with new developments and must be in a position to offer the customer all of the advantages, conveniences and new developments which other appliances have. It is felt, however, that some standardization of lines can be obtained without in any way sacrificing the advantages of modern devices.

It seems desirable that we, as an industry, endeavor to secure as wide an appliance distribution as possible through the establishment of an adequate number of retail outlets that can be profitably operated. To insure the attainment of these objectives, utilities should not demand or accept the "exclusive" on a make or line of merchandise. If for some warranted reason they consider taking an exclusive, consideration should be given to:

(a) The effect on economics of local distribution
(b) Utilities relations with dealers in its area of service
(c) The basis of competition between the "exclusive" line and other lines handled by dealers

Installation

The adoption of a policy on the installation of appliances to insure complete customer satisfaction is recommended. In most instances, this will require a provision for the adequate venting of appliances.

The practice of contracting installation work to dealers is desirable, particularly as it pertains to domestic appliances. Where no competent dealers are available to do this installation work it may be necessary for the utility to assume this responsibility. It is recommended that every effort be made to foster and establish an adequate number of organizations to handle installation work.

Compensation

In the past, gas industry firms (utilities and others) have been criticized for their methods of compensating salesmen. Too often these compensation plans have not been of the type that would attract high caliber men.

While there are many different types of compensation, such as straight salary, straight commission or a combination of both, the committee feels that the selection of the exact method is a matter for individual company decision. It does seem, however, that *some* type of incentive compensation should be adopted as an aid to load building. Any sound compensation plan embraces three broad objectives. They are:

1. Building and maintaining good will for the company
2. Incentive for greater production
3. Influence on the salesmen's morale and enthusiasm

These objectives are fundamental. However, there are many other considerations which should be weighed. Will the compensation plan selected:

1. Attract high caliber men who want to make a career of selling?
2. Decrease the labor turnover that has been so expensive in many organizations?
3. Give management adequate control over the salesmen's activities?
4. Encourage the type of customer service the management wants?
5. Reward like ability and effort with reasonable uniformity?
6. Provide the incentive to sell customer satisfaction as well as the product or the service?

These are only a few of the items that need examination when considering the relationship between compensation and the accomplishment expected of salesmen.

Summary

The foregoing is a resumé of the important factors relating to the adoption of a postwar sales and merchandising policy. The list is not complete. There will be additional factors applicable to an individual company or territory. The establishment of policies to attain long-range objectives is a serious and difficult task that requires profound thought and deliberate consideration.

2. ADVERTISING POLICY

WHEN conditions return to normal, and during the transition period, advertising and mass education is a "must." Not only is it a tool to be used to recoup war business losses which will occur when military operations cease, but it is a medium by means of which many thousands of newcomers in our midst will be informed of the desirability and essentiality of gas as a fuel.

Tremendous changes have taken place on the West Coast in the past four years in the customer rosters of the utility companies. The enormous population increases in the West, together with the population shifts from the back country to the centers of shipbuilding and aircraft production, have brought thousands of people to the urban areas who previously may have had little or no experience with gas appliances and equipment and especially with modern, high quality appliances and service.

Many prewar customers, who have had long and favorable service from gas appliances, may have doubts that have been aroused by wartime appeals to save and conserve gas. Their whole concept of its dependability and permanency may have been adversely affected. Confidence must be built anew in these customers and advertising is one of the best means of accomplishing this.

National Advertising

One of the foundation stones for complete advertising coverage and a means of giving added emphasis to all local publicity is a strong national magazine advertising program. The decentralized nature of the gas industry from a manufacturing standpoint requires that full support and encouragement be given to the national advertising program of A. G. A. In addition to this, manufacturers should be induced to increase their national advertising, both through their own direct programs and through their national association.

Competitive manufacturers, even those still engaged in the war business, are advertising in national magazines generously. They are doing this not only for the purpose of keeping their names before the public but to build up and sustain an interest in the products they will again manufacture when their war production job is over. This, of course, has been done to some extent by gas appliance manufacturers but in nowhere near equal volume. During the past several years, for example, the electrical industry has spent in national magazine advertising approximately six times the amount spent for gas appliance advertising through the same media.

For years competition has glamorized and

romanced the completely electrified home. The public has been reminded repeatedly that electricity provides "the modern way of life." Such benefits as leisure time, safety, cleanliness, and still others, have been emphasized as exclusive competitive advantages. This mass-educational advertising, coupled with a universal interest aroused during the war in the novel, mysterious, and widely utilized electrical developments, such as electronic devices, heating applications, etc., has more than intrigued the layman. These influences upon the men and women in the Service, many of whom in the future will return to their prewar status—customers of our industry—call for some offsetting action. National advertising of gas and gas utilization should be increased to meet the situation.

Regional Advertising

Advertising by P. C. G. A. on a regional basis performs many of the functions and produces some of the same results as indicated for national coverage. In addition, it supplements the national messages and fills a gap in the coverage which would otherwise obtain. Thus, the regional program should be continued. Both the national and regional copy gives weight and emphasis to all of the forms of individual local advertising.

It is believed that this over-all coverage should be augmented with another medium —radio. Perhaps a gas radio program could best be supported and sponsored on a national basis. If this is not brought about it should receive the serious attention of the P. C. G. A. with the thought that the job should be done in its territory of jurisdiction. A West Coast gas radio program should have the greatest possible degree of support of manufacturers as well as utilities. It is recommended that this project receive further consideration in the ensuing year.

Local Advertising

Without discounting the value of regional and national copy, it must be admitted that local advertising is the most important. Such local and regional advertising sharpens the focus of the buyer's mind, first lured by the colorful national appeals. It is nearer the point of purchase decision. As a matter of fact, it should be the objective of the gas industry in each locality to make up in local advertising what is lacking both in volume and type of message in national advertising. The "Grass Roots" approach to local advertising offers manufacturers, utilities, distributors, and dealers, the opportunity to match or excel competition. Furthermore, because of the varying conditions in each community, localized advertising can be made the most effective because it can be built around specific, concrete programs and policies. Local advertising—to counteract the claims of competition—should sell the benefits of modern gas appliances in terms of their contribution to health, comfort, convenience, and dependability, as well as the very advantages stressed by their competition.

Local Media

The committee recommends that all forms of local advertising media be employed, i.e.:

Newspapers
Radio
Direct Mail
Store Windows
Billboards

In addition, every advantage from an educational point of view should be taken of the personal contacts made with customers. Personal selling is the most potent form of education and all calls made by salesmen, service people, over the counters, and in the stores, should be fully capitalized to create maximum appreciation of gas appliances.

Theme of Advertising Copy and Responsibility of Different Branches of the Industry

Advertising copy, of course, in a well-rounded program should include all types of messages from straight institutional to the straight merchandising type and combinations thereof. But one theme in particular should be stressed—that is, the economic advantages of gas appliances. These might be summarized as follows:

Appliance	*Economic Advantage*
Cooking Water Heating	Installation Cost Recurring Operating Cost Servicing
Heating Refrigeration	Recurring Operating Cost Servicing

It is believed that the utility can best perform its function by gearing its advertising copy to customer benefits and appliances—use values—rather than by stressing makes of equipment and competitive product features. Manufacturers and dealers, on the other hand, must convey to the customer the specific information as to:

a. What make to buy
b. The price to pay
c. Where to buy
d. Amplification of the benefits featured by the utility advertising.

It is assumed also that utility advertising should blanket in the dealer as much as possible in order to tie in to every selling message the greatest possible number of outlets and points of customer contact.

These ideas are presented—not as the only answer to the advertising problems which face the industry in the postwar period—but as a fairly accurate statement of the aims and objectives of a constructive program for our members to follow.

3. SERVICE POLICY

IT is generally conceded that the gas industry in the postwar period will face an increasingly aggressive competitive situation from other types of fuel and sources of energy. To successfully defend our position and to gain new ground we must utilize the "shock-troops" of service to the utmost. Good service is the foundation of good customer relations. It is largely through the innumerable daily contacts with customers that their opinion of the utility and its service is determined. The importance of this service cannot, therefore, be depreciated. It contributes to a more extensive use of gas through the efficient operation of existing appliances and equipment. Good service also influences the installation of additional equipment and thereby aids in developing sales. It safeguards the retention of existing business that may be threatened by competition.

Any service policy that is adopted should have as its foremost consideration two basic objectives:

1. The interests of the customer
2. The protection of the gas industry

To attain these objectives the best possible service must be maintained.

Division of Responsibility

A division of responsibility for the satisfactory performance of appliances and devices should be clearly recognized.

It should be the utility's primary function to deliver gas of high, uniform quality and standard pressure on a dependable basis; i.e., a continuous supply without interruption insofar as firm gas is concerned. This means that the fuel should be free of impurities to a reasonable degree and maintained with a minimum variation in heat content. In addition, the utility is necessarily concerned with the safe and efficient utilization of gas and should shoulder its full share of this responsibility.

Manufacturers should be responsible for the proper design and construction of appliances and equipment. Beyond that they should give due consideration to satisfactory performance of their products under typical field conditions. This contemplates proper attention to simplification and standardization of design to the end that servicing problems and future service costs will be held to a minimum.

Dealers should be responsible for the installation and performance of appliances and equipment sold by them. In some areas, because of competitive conditions or commodity costs, it may be necessary for the utility to participate in this responsibility. In the latter situation, any action taken by the utility should be reconciled with the dealer's interests.

When and where all of the functions of producing, selling, installing, and servicing appliances and equipment, together with the supply of fuel thereto, is handled on this sort of a teamwork basis, there should result a community of interest and reciprocity of support and action of the type that builds a strong united industry.

Guarantee

Any service policy should define the seller's responsibility for the performance of

new appliances and the fulfillment of the initial guarantee.

All service organizations have suffered from the "headache" of customer misunderstanding and misinterpretation of appliance guarantees. Product guarantees are the responsibility of the manufacturer, but normally he is far removed from the customer. As a result, an indirect responsibility is imposed upon the distributor and the seller in making final adjustments with the ultimate customers.

Manufacturers should review their guarantee practices and specifically define guarantee policy as to who does what. This action will clarify the responsibility that devolves upon the distributor, utility, and the dealer. The industry as a whole, as well as the customers we are serving, will benefit because of fewer misunderstandings and smoother transactions when trouble does arise.

Installation

In general, service by the utility should not include the installation of appliances or other gas piping beyond the meter.

In areas where there are no established installers or where competitive conditions dictate, the utility may have to undertake this work. Any policy adopted should make provision for the participation by installers on a profitable basis.

Maintenance and Repair

Service work requiring maintenance and repair after the official guarantee period has expired should be done on the following basis:

1. Make a legitimate charge for labor and parts.
2. Where practical, make provisions for dealers to handle all maintenance and repair work.
3. If the utilities handle such service it should be without discrimination to all customers.
4. In those areas where commodity costs or competitive conditions are extreme, the utility should continue the practice of rendering a maintenance and repair service that will protect the interest of the utility and the industry as a whole.

Adjustments

The utility should render free adjustment service incidental to the action taken on all complaints and inspection. This service should include all minor adjustments and be available to any customer without discrimination.

Dealers should be encouraged and trained to handle any adjustment work required in addition to their maintenance and repair work.

4. INSTALLMENT PURCHASE FINANCING

YOUR committee undertook a survey of the current thinking on postwar installment purchase financing in an endeavor to forecast the probable trends in this field.

From present indications, it would appear that banks and other commercial credit organizations are looking forward eagerly to the financing of installment paper as a sound investment. There is a possibility that FHA or some other Government agency may enter the installment financing business in the postwar period. Regardless of the action taken by any Government agency, there is every indication that private financing institutions will be sufficiently strong to adequately take care of all installment financing demands in this area.

In the development of a postwar financing program, commercial organizations are making provision for:

1. Adequate installment buying plans to prevent a wholesale cashing of War Bonds in the postwar period.
2. Buying arrangements that would permit the public to keep their "nest egg" and purchase major items out of income.
3. Convenient conditions of purchase to meet the needs of returning service people.

Member companies should investigate facilities for appliance financing that will be available through established financing organizations, and thereby position themselves to meet the demands of the postwar period.

Underwriting Installment Papers

From the present outlook and indicated trends, there seems to be no necessity for utilities to underwrite installment paper. The committee recommends that utilities avoid such action as underwriting should not be necessary on reasonable length of terms (1½ to 2 years). It appears undesirable to have terms longer than this during the seller's market anticipated in the early postwar period. When a buyer's market approaches, the matter of credit and length of terms will need review and possibly some revision.

Should the utility finance its own paper on direct sales, the terms offered to the purchaser should be comparable to those available to dealers from establishd financing institutions.

Financing Through Mortgage Loans

A movement is under way nationally to include additional major appliances in mortgage loans. There has been much discussion for and against an expansion of this type of financing. The arguments can be briefly summarized.

Arguments in Favor of the Plan

(1) The great need for new postwar housing lies in the lower income brackets. Every time the cost of a house is lowered $1,000 the number of possible buyers increases. There will be more buyers if houses are sold complete with appliances all under one definite financing arrangement.

(2) People are accustomed to buying complete packages—in automobiles, clothes, etc., and will patronize the builder who offers them the same completeness in a new house. It will provide a larger market for those major appliances which everyone wants but cannot afford to buy through the ordinary channels of trade. For example, a house selling for $4,500 under a FHA insured 25-year plan will call for a down payment of $500 and monthly payments of $35.00. If appliances retailing at $455 were installed, the down payments would be increased to $555.00 and the monthly payments to $37.32. If instead the buyer is required to buy the same appliances separately, he would probably pay 10 per cent down and $15.80 for 30 months, increasing his monthly total payments to $50.80 for that period.

(3) FHA already has gone a long way toward making the practice possible. At present 42 state FHA offices declare ranges eligible for insurance under realty mortgages. Refrigerators are eligible in 41 states; dishwashers in 40, garbage disposal units in 34, and Bendix type washers in 18. In the Pacific Coast states the following appliances are eligible. (This is in addition to heating systems and water heaters which are universally considered as a part of the house.)

Arizona—Attached or built-in stoves, attached or cased in refrigerators, and washing machines of the Bendix type.

California—Attached or built-in stoves, attached or cased in refrigerators, dishwashers and garbage disposal units which are a part of the sink installation, and washing machines of the Bendix type.

Nevada—"Plug-in" ranges and refrigerators.

Oregon—"Plug-in" ranges and refrigerators, dishwashers when a part of the sink installation, and Bendix type washing machines.

Washington—"Plug-in" ranges and refrigerators.

Utah—"Plug-in" ranges and refrigerators, dishwashers and garbage disposal units which are a part of the sink installation, and washing machines of the Bendix type.

Arguments Against the Plan

(1) It would disrupt the usual channels of trade in that it would by-pass the retail dealer on appliance sales to new homes, especially those built by speculative builders. This might create a dealer problem of more or less magnitude for both utilities and manufacturers—its degree depending upon prewar practice.

(2) Experience with prewar speculatively built housing in which heating systems and water heaters were customarily installed by the builder indicates that other appliances so installed will be bought in quantity, on price, and therefore be inferior equipment. This cheapening process will be more costly to the consumer, in the long run, because of greater costs for repairs and replacements. It is feared that the business will not be profitable to the manufacturers who sell it and the equipment will be such that it will impose service problems on the utility and give the user unsatisfactory service and poor impression of gas.

(3) The point has been raised that the plan will lose to the gas industry any price advantage its appliances may have over competitive appliances. This would probably arise only in cases in which the buyer had a choice of appliances and favored the competitive appliance so slightly that he would buy gas if its first cost was considerably less. Of course this difference, financed through the mortgage, would be so small as to be insignificant.

(4) The electric appliance industry has a stronger national sales promotion program than has the gas appliance industry. Insofar as postwar building may become centralized in large national concerns through prefabrication or otherwise, the gas industry might find itself at a disadvantage under this scheme of financing.

(5) The loss of volume by small manufacturers and retailers would cause a shrinkage in taxable income to the Government and would seriously impair the ability of industry to re-employ those returning from the armed services and from war production activities.

(6) It would be unwise, in the postwar period when all industry and trade will be facing many new problems and uncertainties, to attempt a radical and revolutionary change in merchandising that would further dislocate the internal economy of the nation.

Such a movement has many implications that are detrimental to the interests of the gas industry. Your committee has discussed the problems with manufacturers, wholesalers and retailers and has found a unified opinion that the industry should not endorse this program. It is therefore recommended that the Pacific Coast Gas Association notify the membership of its position in the matter.

5. TRAINING AND REFRESHER COURSES FOR INDUSTRY PERSONNEL

FOR many years the gas industry has recognized and continuously stressed the importance of good customer relations. While this phase of our business has received the attention it so richly deserves, we have at times neglected an important adjunct of this program, namely, the training of employees. It is generally agreed the degree of success of any customer relations program is in direct proportion to the enlightenment and number of employees participating. One of our main objectives should be to equip industry employees with a knowledge and understanding of our operations, policies and customer needs so that they can voluntarily accept the responsibility of the maintenance and improvement of our relations with customers.

The gas industry can best insure its position and prepare for competition by advocating and undertaking extensive training and refresher courses for employees in all branches of the industry. Because of their leadership in the industry, it is recommended that utilities assist in, and, wherever practicable, provide training media for dealers and their employees.

Training programs should be designed to reach all groups within the industry such as:

1. General Employees of Member Companies
2. Public Contact Employees
3. Dealers and Their Employees

Refresher courses for people returning from the armed services should also be provided.

It is your committee's recommendation that the program of sales and service personnel training (Utility-Manufacturer-Distributor and Dealer) embrace not only the dissemination of product information and a study of the fundamentals of salesmanship, but also employ the technique of personnel selection.

General Employee Training

It is difficult to be enthusiastic about subjects on which we have little or no knowledge. When the employee knows and understands what makes his company "tick" and what its policies are, he begins to feel as though he were a part of it. People are more apt to generate enthusiasm about the things with which they are familiar, and of which they have a knowledge. Greater loyalty to the organization can be fostered by increasing the self-esteem of each employee through a better knowledge of his company and his job.

The subject matter selected for this group of employees should include the following:

1. General information about the industry.
2. Specific information about the employing Company.
   (a) Company organization
   (b) Policies
   (c) Practices
   (d) Price structures
   (e) Competition
   (f) Customer relations
   (g) Products and their utilization
3. Basic information on gas, gas equipment and its utilization.
4. General guides as to the procedure these employees might follow to advance the acceptance and expansion of the use of gas and gas equipment.

Public Contact Employees

We should provide specific training for our public contact employees in the conduct of business transactions with our customers. This entails instruction to provide an intimate knowledge of our rules and regulations and instruction and training in the art of meeting people in a courteous and tactful manner, with the fixed purpose of making it easy and pleasant for our customers to do business with us. By courtesy and friendliness we can humanize and strengthen our customer relations, because people like to do business with their friends.

If through careful and thorough training we can develop a sincere spirit of friendliness on the part of our employees, in their dealings with our customers, we will have established an invaluable relationship that will stand the test of time.

This group, like the general employees classification, should be provided with general data on the industry, their company and their competition.

Salesmen, home economists and service personnel should also be given a complete and thorough course in product knowledge, i.e., appliance and/or equipment, the fuel itself and its proper utilization.

In addition, they should be given intensive instruction and practice in the technique of selling gas equipment and/or gas services, as well as instruction in the process of integrating this knowledge into the art and skill of "doing."

Dealer and Dealer Personnel

Instruction for this group should include general information on the industry, the policies of the local utility and their individual employers.

It should also include the product and job training indicated above for salesmen, with the proviso that such job training be pertinent and specific to each type of activity.

General

In the training of all groups within the industry it is urged that particular emphasis be given to the necessity of selling ultimate customer satisfaction.

In view of the competitive outlook for the postwar period, the gas industry must go further than product selling if it is to maintain or expand its present position in the field of customer satisfaction.

Even those employees who are not actively promoting equipment and appliance sales should be trained to do everything possible to insure customer satisfaction. They should be instructed that whenever they learn of dissatisfaction they should report such information to the proper department for action.

In the case of dealers and public contact employees, the underlying theme in all their training should point toward action on their part which will achieve the goal of customer satisfaction. High pressure selling methods and a lack of follow-through on the part of public contact employees may create misunderstandings or customer dissatisfaction with equipment or gas fuel. These pitfalls should be guarded against. Methods and procedures to be followed in attaining the desired results should be fully outlined and explained.

Recommended Methods of Training

The purpose of this section is to offer some ideas as to the source of subject material to undertake the various phases of training enumerated above. It is recognized, of course, that no standardization is possible—that "cut and dried" methods all have too many weaknesses and that opinions vary so widely that authorities will seldom agree on exactly the same procedures. Nevertheless, these points might be useful in guiding individual companies in

undertaking this important and difficult task.

As to the general information portion of the training, it is suggested that each company prepare an information manual giving as much detail on the industry and their particular company, its makeup, operations, policies, objectives, etc., as seem suitable. To augment this, and possibly to provide a good foundation of information on the industry, it is proposed that this Association, through its Managing Director, prepare a general information manual covering the important and specific points, advantages and policies of the industry as a whole.

In addition, your committee recommends that the Association produce and make available to member companies a color, sound film covering some of the following ideas:

1. A brief history of the gas industry.
2. The service traditions of the industry.
3. The comfort and conveniences which are provided in the home as contrasted with conditions of many years ago.
4. The low cost of operation.
5. How free enterprise and private management have succeeded in providing good service at low cost.
6. A glimpse of the organization behind the gas valve, from the wells producing natural gas, through the transmission and distribution systems into the home of the customer or into a business establishment.

As to training methods and material for job training, it is suggested that member companies make full use of a series of instruction pamphlets produced by the Committee for Economic Development, entitled "The Selection and Training of Sales Personnel." This series of pamphlets has been designed for the information and guidance of executives as to the principles to follow in training, and the recommended proven methods of accomplishing maximum results.

Gas Appliance Selling Course

As a basic book of material for the use of sales employees, the Pacific Coast Gas Association course entitled "Gas Appliance Selling," prepared in 1941, is recommended. This latter course of training is pertinent to our industry and specific on the points of proper utilization and technique of selling various gas appliances. It provides a sound and extensive background of information from which examples can be drawn and elaboration as to ideas and methods added.

The Association should undertake the development of an Instructor's Manual to be used, by member companies, in conjunction with the Association's course on "Gas Appliance Selling."

To supplement the printed material, your committee recommends that the Association produce and make available to member companies a series of color, slide sound films covering such subjects as the following:

"Know Your Merchandise"—how to analyze the appliance from the customer's viewpoint.

Selling tools and their use, to include the following: Customer benefit, good quality, appeal to pride, service, etc.

Buying motives and building the sales presentation.

The sales interview in the home and in the store—to include the approach and telling of the sales story.

Meeting objections and closing the sale.

Planning for success to include prospect development, canvassing, time control, prospect follow-up, and after sales follow-up.

The foregoing six films would be a visual presentation of the fundamentals of selling and should be very effective in the conduct of any sales training course. The following films would have to do specifically with the type of appliance and would show the application of the fundamentals of salesmanship to each appliance:

Gas Ranges
Automatic Gas Water Heaters
Gas Heating
Gas Refrigeration
Gas Air Conditioning

With the proper use of conference training methods, or a combination technique of instruction-conference training methods, considerable progress is possible. The real test of good training, however, lies in the final step of providing some means of demonstration or training in doing the job. This should involve actual field work and is the translation of theory into practice. It is the final step in converting the art of "knowing" into the art of "doing." In those companies with adequate personnel this phase of the work might properly fall under the direction of trained and competent supervisors.

Selection of Personnel

Since it is the purpose of the industry to develop the highest possible type of personnel to sell its products and services, not only is training a necessary step in the process, but it should be preceded by an equally important one, namely, the selection of potentially qualified people. Reliance solely upon personal judgment in the selection of new employees in the industry has not been too satisfactory in the past and it should be augmented by the use of scientific selection methods if for no other purpose than a check of individual judgment.

Psychological tests of one type or another have been developed for years and considerable time has been available to make observations of their value. Certainly, much remains to be done. Nevertheless, so much progress has been recorded that the committee believes scientific selection methods are worth adopting—at least to the extent of using those elements of the science which have been rather completely tested.

The impetus which has been given by the Army and Navy to aptitude tests and psychological selection methods in the placement of service people has acquainted millions with the process. It has served also to uncover the weak and strong points of such methods and to "weed out" the unsatisfactory ones. Certainly, industry will be considered decidedly backward if they are not willing to recognize this engineering approach to the human problem. While no particular method is recommended, it is believed that companies in this Association should make their own studies and endeavor to make use of the findings of the past several years.

Gas Participation in Builders' Exposition

GAS appliance manufacturers are joining with more than 250 manufacturers of building materials and supplies, home appliances and equipment who will exhibit their wares in the forthcoming building exposition sponsored by the National Association of Home Builders of the United States at the Sherman Hotel, Chicago, Illinois, January 15, 1945.

This is the first show of its type conducted since the beginning of war and it is expected that more than 2000 representative builders from all parts of the United States will attend.

Gas appliances and gas services will be represented at the exposition. Servel, Inc., is planning to exhibit an all-gas kitchen in addition to its summer air-conditioning unit. Surface Combustion Corporation and the Bryant Heater Company will exhibit gas heating equipment. George D. Roper Corporation will feature a gas range and the A. O. Smith Company an automatic gas water heater and possibly gas laundry drying equipment.

Gas company sales managers are urged to attend this important exposition as it will afford them an opportunity to get a preview of gas industry and competitive efforts for the postwar new home market.

Nov. 20—Dec. 16

Window Display Contest Supports War Loan Drive

THE Window and Store Display Committee of the American Gas Association, headed by George W. Browne, Public Service Electric & Gas Co., Newark, N. J., has announced its sponsorship of a national display contest in support of the Sixth War Loan Drive. Open to all gas industry displaymen, the principal requirement of the contest is that each display must feature a $100 War Bond or a reproduction thereof. Photographs of the displays will form the basis of awards and all entries must be postmarked not later than December 26.

Companies have been classified according to size and a first prize of a $50.00 War Bond, a second prize of a $25.00 War Bond and an honorable mention will be awarded in each of three classes, plus an official Treasury citation for all winners. Divisions of the contest are: Class A for cities of 100,000 population or over; Class B for cities between 50,000 and 100,000; Class C for cities under 50,000.

Photographs entered must carry the name and address of the utility, name of person responsible for the display, dates when display was on view, and class in which display is entered. Entries should be mailed to A. G. A. Sixth War Loan Contest Committee, American Gas Association, 420 Lexington Ave., New York 17, N. Y.

Wartime Home Service Bulletins

ADJUSTMENTS in home service departments have brought about changes in wartime demonstrations and home calls and have been set up for an ever-changing audience. Two printed bulletins of the A. G. A. Home Service Committee are now available to the industry—"Home Service Programs For Young America" and "Visual Aids, Wartime Use in Home Service Demonstrations."

In wartime, the young people in many homes have new responsibilities in the purchasing of foods and preparation of meals for the family. "Programs For Young America" outlines a resumé of programs for high school age groups developed in a number of gas companies and set up with particular dramatic application.

The interim bulletin of Visual Aids deals with the problem of meeting shortages of food supplies, time for marketing and difficulties in transportation of supplies and equipment by pointing out the Visual Aids possible in charts, slides and blow-ups.

Both of these printed bulletins are available from the American Gas Association at 10 cents per copy. Among the people in each community who could make use of this material would be members of nutrition committees and teachers of home economics. Beyond the limited supply of booklets on hand, the printer will hold type until January 1, 1945, for any orders in quantity.

Managing Committee Maps Residential Gas Section's Program

AN interesting and informative meeting of the Residential Gas Section Managing Committee under the direction of retiring Chairman C. V. Sorenson and incoming Chairman J. H. Warden was held in Chicago, October 31. In view of the cancellation of the Section's annual meeting, election of Mr. Warden as chairman for 1944-1945 was confirmed at this meeting. J. J. Quinn, Boston Consolidated Gas Co., is the new Section vice-chairman.

The meeting was featured by presentations of committee chairmen summarizing the plans of their respective committees for the year. A complete report of these plans will be published in an early issue of the A. G. A. MONTHLY.

Among the committee chairmen who outlined their programs were: George W. Browne, Newark—Window and Store Display Committee; W. M. Chamberlain, Grand Rapids—Domestic Range Committee; Colleen Fowler, Kansas City—Home Service Committee; J. L. Johnson, Providence—Refrigeration Committee; L. Ourusoff, Washington—Committee on Housing; F. M. Rosenkrans, Kansas City—Committee on Improving Domestic Gas Appliances; J. C. Sackman, Hammond—House Heating and Winter Air Conditioning Committee; C. S. Stackpole, Baltimore—Water Heating Committee; R. J. Vandagriff, St. Louis—Committee on Market and Economic Research; and R. E. Williams, Binghamton—Committee on Selection and Training of Sales Personnel. H. Vinton Potter, director of Coordinated Gas Kitchen Program, gave a comprehensive picture of the status of this activity.

A large number of affiliated regional associations were represented and it was emphasized that closer cooperation with these groups is a major objective of the Section. These associations were represented as follows: E. V. Bowyer, Mid-Southeastern Gas Association; Henry J. Dropp, Wisconsin Utilities Association; Robert E. Finley, Ohio Gas and Oil Men's Association; C. W. Goris and Herman G. Horstmann, Indiana Gas Association; George B. Johnson, Mid-West Gas Association; N. E. Loomis, Michigan Gas Association; J. G. Merkle, Pacific Gas Association; Christy Payne, Jr., Pennsylvania Gas Association; and Frank C. Smith, Southern Gas Association.

Also present at the meeting were H. Leigh Whitelaw, managing director, Association of Gas Appliance and Equipment Manufacturers; J. W. West, Jr., A. G. A. assistant managing director; Jessie McQueen, A. G. A. home service counsellor, and F. W. Williams, secretary, Residential Gas Section.

Requirements for CP House Heating Program Near Completion

J. G. Tooker

AT a meeting of the Subcommittee on CP House Heating Requirements under the direction of J. G. Tooker, sales manager, The Wyandotte County Gas Company, chairman, held at the Palmer House, Chicago, Illinois on November 1-2 considerable progress was made toward the completion of CP requirements for forced warm air heating equipment and its installation.

As a result of this meeting the CP requirements were virtually completed on a national basis with only a relatively small number of exceptions to the requirements applicable to the far west and southwest sections of the country. Much credit for progress made at the meeting goes to C. H. O'Donnell, Boston Consolidated Gas Company, and Raymond Little, Equitable Gas Company, Pittsburgh, who as members of Mr. Tooker's subcommittee, collated various comments and suggestions received from many sources.

Among those in attendance of the meeting were Frank C. Packer, assistant to the vice-president and general manager of the Payne Furnace & Supply Co., Beverly Hills, California; J. G. Merkle, Southern California Gas Co., representing Harry L. Warren; Eugene Weaver, chairman of the A. G. A. E. M. CP Requirements Committee, Keith Davis, Bryant. J. C. Sackman, chairman A. G. A. House Heating and Winter Air Conditioning Committee, Robert T. Haley, Minneapolis Gas Light Company and Mr. Little.

A meeting of the House Heating and Winter Air-Conditioning Committee will be held in the near future to review the work completed by this Subcommittee on Requirements and to consider the preliminary CP Promotional Program which has been prepared by the CP Promotional Subcommittee under the direction of L. M. Holmes, commercial manager, Dayton Power and Light Company.

Meeting Food Service Problems in a Changing World

F. H. Trembly, Jr.

• This comprehensive and valuable discussion of the food service problems facing the gas industry was presented at the 1944 War Conference on Industrial and Commercial Gas. It contains many constructive recommendations for postwar action by the gas industry.

FRANK H. TREMBLY, JR.

Assistant Sales Manager,
The Philadelphia Gas Works Co.

MUCH that can be said about the postwar period—its competitive aspects—its threat to the gas industry—the challenge and the opportunity provided for aggressive promotion—the critical nature of this era—and the policies that our industry should adopt—all of these have already been said many times and said well. I need not repeat them here except to remind you that this period just ahead is our zero hour at which time we must advance—and it is up to us to be prepared, for if we are not prepared then it will be too late. There are many uncertainties in the period ahead but that element about which there is no uncertainty is that it will be a period of change, when empires will be lost and won and when stable industries like our own will be subjected to more competitive strain than we have ever known hitherto.

Value of Load

It is not necessary to discuss before this audience the value of the Food Service load. The important thing is that it is not yet fully recognized as a valuable and perhaps perishable load by the management of our industry. We call ourselves salesmen but we have not done a selling job on our industry's management. The opportunity may be provided in the near future to bring some of these facts more forcibly to management's attention.

Competition

One indication as to the worth of this load is the interest that our competitors are taking in it. Surely, if this load had but little value they would not be spending time and money attempting to take it away from us, and unfortunately, in certain instances, succeeding to an unpleasant degree. Oil, coal or bottled gas may prove to be postwar competitors in certain situations, but such competition is transient as the trend is definitely toward refinement in all fuel applications—domestic, commercial and industrial, and as a result our present and ultimate competitor is electricity.

Electric competition in the food service field is developing in the identical way that gas competition developed against coal 30 or more years ago. Gas was first used in coffee urns, steam tables, short order stoves and broilers. With this background of customer acceptance, gas then invaded the coal range field with the result that coal has been practically eliminated from the kitchen.

In like manner, electricity has made a successful entrance into this field through counter appliances and its program has been accelerated by the acceptance on the part of our customers of electric roll warmers, dry steam tables, deep-fat fryers and bake ovens. We can now expect them in the postwar period to direct their full attention to the heavier kitchen appliances.

We stand, as the Russians at Stalingrad, between these aggressors and their goal, supported on our flanks by our equipment manufacturers, our food service equipment dealers and the acceptance that gas now possesses in the food service field. We must match our opponents in aggressiveness and daring. We must throw them on the defensive by counter-attacking the counter-cooking sector. We must match them blow for blow—balance their attention arresting expression, "electronics," with our yet embryonic slogan, "pyronics." For us there is no armistice or peace until we have driven these invaders from our territory.

I am not here to tell you how you are going to do it—that is your own particular problem, and no one can solve it but yourself. Each of us is responsible for our own salvation. I can tell you, however, of the progress the Food Service Committee has made this year. It has been active, aggressive and, I hope, symbolical of this branch of the Industry. Its reports can be most useful and the information provided most helpful to every food service representative. Its program was ambitious and represented a challenge to every one of its members.

Food Service Equipment Committee Program

Included in its activities is a subcommittee presentation, under the able leadership of Harry Sutton, describing the need and suggesting the form for a survey by utilities of food service establishments. This report pointed out the opportunity for equipment replacement provided by the war. In all probability, our competitors know the location of the worn-out equipment on our lines, and it is essential that we also, through the medium of such a survey, have the same information on which to act as soon as equipment is made available.

A subcommittee on engineering selling, under the chairmanship of Walter S. Anderson, has under preparation a new Hotel & Restaurant manual or handbook that will represent, when completed, a milestone in the progress of our industry. I know of no branch of the gas industry that is in greater need of factual data and technical information than the food service division. It is a most commendable thing that a new and complete handbook is now under way. In addition, this committee has under preparation an engineering sales training course that will prove of great assistance when the time comes to educate the new personnel that will be required in this branch of our industry during the postwar period.

A subcommittee on food service equipment publicity, under the chairmanship of Thomas M. Offutt, is working on ways and means of giving a proper presentation to the position that gas now occupies in the food service field. The work of this committee will be particularly adapted for publicity presentations to our customers, to increase their appreciation of gas as a heavy duty cooking fuel. We have for too long a time been hiding our light under a bushel, and failing to fully advise our customers of our success in this field.

The Appliance Study Subcommittee, with myself as chairman, is obtaining a cross-section opinion of the gas industry as to the performance of gas food service appliances, the service experience of member companies with these appliances, and the suggestions of the Industry as to what direction research and development in this field should take. Replies are still being

received and the information obtained from this survey has not as yet been acted upon by the committee. However, I would like to give you a brief summary of some of the more interesting suggestions received, so that you will have some indication as to the direction taken by this survey.

There were 468 questionnaires sent out and but 38 replies have been received to date. It is evident that there are still many utilities to be heard from.

If there is any one point on which there is complete unanimity of opinion in this industry, it is on the subject of greater serving accessibility. That was by far the most prevalent suggestion received and was applied with admirable impartiality to all of the appliances discussed.

From a servicing standpoint, the experience of the industry was well summed up by one west-coast utility in its statement that, "service troubles occurred mostly from grease accumulation, failure of ignition devices, failure of control devices, and rust." Corrosion appears to be particularly troublesome, especially in range and oven parts. The penetration of grease into appliances not only is responsible for many service calls, but is a definite drawback to the sale and operation of heavy duty gas appliances, as they are now designed. The great number of cracks and crevices permitted in their construction, and the inadequate provision made for the definite control of grease, has been the source of many complaints. Another important servicing difficulty, as we all know, is the burning out of pots in deep fat fryers.

Another complaint that is in need of remedy is the stopping up of air shutters with grease and lint. Further suggestions were made regarding the permanent fixing of name plates bearing full information on all food service appliances.

From a performance standpoint, the following items had the greatest over-all appeal: the improvement in temperature uniformity in gas bake ovens and fry-top gas ranges; the increase in speed of recovery for gas deep-fat fryers; the greater use of temperature control on practically all appliances; the development of more rugged types of thermostats; the greater use of automatic ignition by means of safety pilots; cooler valves and controls; and the use of more insulation. The preference is for ceramic-type broilers; the use of counterweights instead of springs for doors; stronger burner cocks and valves; and generally, more rugged construction throughout.

There was a strong and repeated recommendation that all appliances be made grease proof; that corrosion-resistant materials be used in their construction; and that the use of bright metal finish be further extended. The opinion was that ceramic type broilers should be further improved. It was suggested that flexible, "plug-in" gas connections should be developed for counter appliances.

Appliance Streamlining

Judging from the number of suggestions made regarding the streamlining of all gas appliances for both counter and kitchen use, the popular idea is that gas appliances should have an air-flow shape resembling a fighter plane, or a porpoise. A very practical suggestion in this direction had to do with the greater use of welding in appliance manufacture, based on the experience gained in the construction of war materials. The thought was that welding, not only would make possible the rapid forming together of large stamped out sections permitting more attractive designs but would also eliminate to a considerable extent the troublesome cracks and joints that now exist in gas appliances.

Several interesting suggestions were made pertaining to basic improvements. It was suggested that there be designed a substitute for the gas cock as a manual gas regulating device since the angle at which the gas cock is set gives no definite indication as to the amount of gas flow due to the fact that round gas ways are used that gradually form an eclipse on one another.

There was the suggestion from several sources that gas food service equipment be fired with a 100 per cent gas-air mixture, under pressure, from a single mixing device. There is much to be said for such a firing system, in reduced maintenance, faster operation and greater efficiency. The

Why Not a Few Curves on Gas Commercial Cooking and Baking Equipment?

A member of the Food Service Equipment Committee of the American Gas Association who has given considerable thought to the appearance of all kinds of equipment used today in restaurant, lunchroom, hotel and other commercial kitchens and bakeries asks a pertinent question. Have you as a gas man thought about the appearance of the gas equipment that prepares restaurant meals in your city?

STREAMLINING, like everything else, can be carried to excess, but there's no denying that a few soft, gentle curves or other attractive lines in the right places can make even the most efficient and hard-working equipment attractive to the onlooker and to the people who work with it.

Granted that the general public seldom goes behind-the-scenes to the neat, clean, gas kitchens and baking ovens where so much of our edibles are commercially prepared, nevertheless they often see pictures of them in advertisements and in the newspapers and magazines. We know how good this equipment is and can overlook the lack of streamlining, but the public sees shapes and outlines that might well be described as gaunt and stark.

Nor is all commercial cooking equipment located behind doors by any means. Many restaurants, both large and small, have counter and behind-the-counter gas equipment for heating beverages, making hot cakes, broiling and other operations. The use of bright metals on these installations and other touches lend some eye appeal but in large part, they, too, serve utility far more than good looks.

One need be no student of psychology to appreciate the fact that a pleasing and attractive appearance will enhance any product, no matter what its economic and productive qualities. The domestic gas range of today is a thing of beauty as well as a model of efficiency. It pleases the housewife's eye as it speeds her work and helps her turn out tasty, nourishing meals.

The combination cannot help but make her more loyal to gas and gas equipment. Likewise, her friends who see her new gas range and hear its cooking and baking virtues praised are intrigued by the well designed appearance of the equipment.

The big ovens in large bakeries are perhaps the finest and most attractive looking gas equipment used. They are shiny, easy to keep clean, sensibly streamlined, and play no small part in creating the general impression that big bakeries are modern and sanitary.

Is it not logical to conclude then, that purchasers of commercial gas ranges, ovens and other gas food-preparing units will be additionally pleased by a more streamlined appearance as well as being convinced of their efficiency; that counter, kitchen and bakery employees' morale will be given a boost by working with attractive as well as clean and drudgery-saving equipment?

Finally, when the layman or woman sees pictures of commercial bakeries, kitchens, and counter operations where gas ranges, ovens and other items are doing a big job, won't they linger longer over the photo if sleek, smooth lines greet them rather than bare, angular shapes?

The ancient Greeks used to completely finish friezes and other handiwork that were hidden by projections "for the gods see everywhere." With the popularity of photography what it is today, let's remember that now the public sees 'most everything—and kitchens and bakeries are no exceptions; not to mention the close-ups possible at counters.

American Gas Association Industrial and Commercial Gas Advertising for December

The National Advertising Committee of the Industrial and Commercial Gas Section, J. P. Leinroth, chairman, and F. B. Jones, vice-chairman, announces that full page advertisements will appear in the trade and business magazines listed below during the month of December. These advertisements are prepared in cooperation with the Committee on National Advertising as a part of the industry's national advertising campaign.

MAGAZINE	THEME
General Manufacturing	
BUSINESS WEEK (Dec. 2—⅔ page)	For a head start on the field . . . Plan on *GAS* when Re-converting.
(Dec. 16—⅔ page)	Depend on *GAS* . . . to help win your Post-War goals.
(Dec. 30—⅔ page)	*GAS* the economical fuel . . . Let it save for you.
INDUSTRIAL HEATING	*GAS-FIRED* furnaces help produce the new Tubular Railway Axles.
Metals Industry	
METAL PROGRESS	*GAS-FIRED* furnace helps clippers keep busy schedules.
STEEL (Dec. 11)	From Bazooka to Baby Carriage—*GAS* is the Industrial Heating Fuel.
METALS AND ALLOYS	
THE IRON AGE (Dec. 7)	*GAS-FIRED* furnaces help produce the new Tubular Railway Axles.
Ceramic Industry	
CERAMIC INDUSTRY	For a head start on the field . . . Plan on *GAS* when Re-converting.
Glass Industry	
GLASS INDUSTRY	For a head start on the field . . . Plan on *GAS* when Re-converting.
Chemical Field	
CHEMICAL & METALLURGICAL ENGINEERING	Whether Bunsen or Infra-Red Burner—*GAS* is the Superior Source of Heat.
Hotel and Restaurant Field	
AMERICAN RESTAURANT	Washington's New Statler equipped with Complete *GAS* Kitchens.
HOTEL MANAGEMENT	At Harvard . . . America's oldest university . . .
RESTAURANT MANAGEMENT	*GAS* cooks and bakes for student soldiers.
INSTITUTIONS	
School Field	
NATION'S SCHOOLS	Better cooking and baking results today and tomorrow . . . through *GAS* Research.
Hospital Field	
MODERN HOSPITAL	Cambridge (Mass.) City Hospital reports gratifying results in cleanliness, economy since switching to *GAS*.
Food Processing	
FOOD INDUSTRIES	Memo to Mr. Post-War Planner: Call in your Local *GAS* Company Engineer on your Industrial fuel problems.
Baking Field	
BAKERS HELPER (Dec. 2)	*GAS* the *economical* fuel . . . Let it save for you.
BAKERS WEEKLY (Dec. 11)	

suggestion was made that gas radiant tube applications be used on heavy duty range tops for greater heat transmission, and on gas counter appliances to more nearly duplicate electric operation. There was one suggestion regarding the installation of a central gas-fired Dowtherm unit for heating ranges, fryers and ovens. The suggestion was also made that there be developed a complete line of CP heavy duty and counter food service gas equipment.

Just as in the case of servicing, where there was complete unanimity as to the need of greater accessibility, so again we had a practically 100 per cent opinion of the gas industry in favor of a counter pop-up gas toaster. To judge from the replies received, this would be the most acceptable new gas appliance that could be built. It is my hope that the unusual interest shown in this appliance will serve as an inspiration for one or more manufacturers to bring out a successful model.

Those who attended the A. G. A. Technical Conference on Domestic Gas Research, held at Cleveland in February 1944, could not be impressed with the basic improvements that have been made in the art of burning gas. With the engineering data now available, it might more properly be called a science rather than an art. While the subject matter of the Cleveland meeting was directed at domestic appliances, for the most part these same improvements can be applied with equal force to food service equipment. I refer particularly to improvements in gas burner design and efficiency, studies of improved methods of heat transfer, reduction in noise of combustion, development of one-point ignition, experiments with areated and non-areated flames —in all an amazing picture of engineering research that is a credit to the gas industry, and a revelation alike to equipment manufacturers and utilities.

The Cleveland Conference has brought forcibly to our attention the increased engineering and scientific research needed to develop modern, competitive gas appliances. In this connection, I believe that we have a serious engineering deficiency so far as our food service equipment manufacturers are concerned. They can be broken down into two general and rather broad classes: first, those manufacturers who are recognized builders of nationally known equipment; and, secondly, the great number of smaller manufacturers, including in many cases, kitchen equipment houses and sheet metal shops, that construct the great miscellany of the smaller gas appliances, such as coffee urns, steam tables, griddles, hot plates and the like.

Field Engineering Service Needed

Referring to the former group, I believe that they have been thorough and conscientious in the past, in constructing gas appliances that have met accepted standards of performance. I believe that in the future, however, with performance standards raised not only by ourselves but by the force of competition and with the greater technical knowledge available as to the combustion of gas, it will be necessary for these manufacturers to employ a greater number of sound gas equipment engineers in order to take full advantage of research in the utilization of gas, so that they may produce appliances that will properly represent us in the competitive field.

Even with this accomplishment, however, there is a crying need for field engineering service similar to that rendered by manufacturers of electric heavy duty equipment to electric utilities. These sales-engineering representatives should be made available wherever keen competitive situation develops, so that they may bring to the conference table a nation-wide experience in such competitive situations. This would be of tremendous assistance to the gas utility man who for the most part is limited to his own local area in making comparisons or drawing examples.

With reference to the second group, manufacturing the smaller gas appliances, it is too much to expect them to set up in-

dividually an engineering department capable of dealing even with the rudiments of gas combustion to say nothing of the improvements that are now available to us. This lack of engineering design in our miscellaneous appliances has resulted in high fuel consumptions, poor performance, unsatisfactory combustion, many customer complaints and substantial loss of gas load. The many references to this unsatisfactory situation in our appliance study is ample evidence of the widespread existence of this condition.

In self defense I believe it incumbent upon the gas industry, either working through the Food Service Committee, or directly as an activity of the A. G. A. Headquarters office, to make available to such manufacturers, standardized designs from a gas combustion view point of all the lesser appliances. This would permit them to build equipment embodying an intelligent application of gas engineering. This would include provision for proper venting, proper location and type of burners, satisfactory regulation of secondary air and general information regarding controls. The information developed by the current appliance survey would be an admirable starting point for such a program. I believe that the benefits to be gained by such a move, followed up by cooperation with kitchen equipment houses by local utilities to see that such designs are used, would far outweigh any disadvantages that may ensue from such a program.

Dealer Cooperation

It has become rather well established in the domestic merchandising field that the gas industry cannot successfully meet the postwar situation by going it alone. The sales assistance of domestic gas appliance dealers is definitely needed, not only to offset the effect on our customers of the promotion by dealers in electric appliances but to supplement our own selling activities with more customer contacts in the interest of gas appliances.

The situation is, in my opinion, identical in the food service field. These facts must be recognized: Kitchen equipment houses are a permanent part of our commercial economy and their contacts with our customers are generally more frequent than our own. They will be selling food service equipment whether we want them to or not. If we work with them, they will sell gas equipment, if we compete with them, they will sell electric, coal or oil.

To my way of thinking it is just as simple as that. It is better to have them with us than to force them into the arms of our competitors. It seems to me that it is a short-sighted policy to follow sales methods that arouse the enmity of such needed allies.

In some situations I realize that the sales department is under pressure from the company management to produce appliance sales volume and that this pressure results in policies and practices that are antagonistic to the dealer's interests. In this regard we should take another leaf from the book of the electric industry, in that our sales departments should be judged by the gas load added and the load retained regardless of by whom the appliance is sold.

Servicing of Equipment

Another subject of paramount interest to our customers, the kitchen equipment dealers, the equipment manufacturers and ourselves, is the subject of appliance servicing. Our attitude toward appliance servicing has at times been the same as that of the Minister's toward righteousness—"We are for it"—however, let us not be an industry of Elmer Gantry's and give it lip service only.

The need for service is obvious. Manufacturers tell me that in many gas situations service is practically non-existent and its absence has proved a considerable handicap to the continued acceptance of gas in the food service field.

There has been much discussion and I feel inadequate action on this subject. The important question is not whether or not we charge for service, but that service be properly rendered all of our customers on a definite schedule of sufficient frequency to assure satisfactory appliance operation.

My own opinion is that the most satisfactory method of charging for service is to include it in the gas rate rather than to make a separate monthly charge. This procedure assures all of our customers of proper service and eliminates a separate billing or customer charge that can easily be used as ammunition against us by our competitors. Since it is the unpleasant truth that gas equipment requires more servicing than electric, we are much better off in concealing this comparison in our rate than leaving it as a separate item for all to see.

Specification of Equipment

We have in the past benefitted by observing the technique of our competitors. For example, the greater use of insulation and heat control in gas food service equipment has been influenced by electric competition. I believe that they have other practices that we might well consider adopting, such as their policies in specifying food service equipment. Two of their policies stand out prominently and may well be more fully adopted by ourselves.

The first is their extensive use of diversified and specialized equipment, that represents a still further departure from the original view that the range was the jack-of-all-trades in the kitchen.

The second is the use of a minimum of

(Continued on page 536)

Developments in Aluminum and Magnesium Melting Reported

THE mid-year meeting of the Aluminum and Magnesium Melting Committee of the A. G. A. Industrial and Commercial Gas Section was held at Cleveland on October 17, under the chairmanship of C. George Segeler.

Outstanding among the work reported at this time was the statement by D. V. Ludwig, materials engineer of The Lukas-Harold Corporation, that experience in securing aluminum castings from various suppliers using both gas and oil melting furnaces had clearly demonstrated the superiority of gas. Mr. Ludwig repeated these remarks at the Industrial Gas Breakfast on the following morning, amplifying them by reference to his previous foundry experience in several eastern plants where gas and oil were used as fuels.

The members of the committee have cooperated in suggesting design features for a new gas-operated aluminum melter being built by the Eclipse Fuel Engineering Company for installation at the Ebaloy Foundry in Rockford, Illinois. Novel features of convenience, advanced design of the heat application, and means for completely protecting the melt from contact with products of gas combustion will be incorporated in this new unit.

Two eastern foundries, one using oil and the other using gas, will participate in a series of tests designed to disclose the exact effect of fuels on the soundness and density of aluminum castings. The work done by Mr. Ludwig, referred to above, furnished a valuable background for this effort, but it was nevertheless felt that scientific tests under controlled conditions would be highly desirable in order to establish the claims conclusively.

F. K. Whiteside of The Brooklyn Union Gas Co. described a new multi-burner aluminum melter which he had designed and which was now operating in Brooklyn at a plant producing aluminum die castings. Results from this furnace were very encouraging, particularly because of the highly uniform temperature conditions which could be maintained through the melt by means of the method of heat distribution adopted. The burners in this case were one above the other rather than being distributed in a horizontal plane in accordance with conventional practice.

In the discussion on magnesium melting, reference was made to a recent test to determine the thermal efficiency of the melting process. This was carried out under the supervision of Mr. Whiteside in a foundry in Brooklyn manufacturing incendiary magnesium bombs. Since no heat treating was required, it was unnecessary to utilize a superheat pot. The results averaged around 3,000 B.t.u. per pound of finished castings.

Technical Section Committees Organize for Gas Industry Advancement

THE Technical Section made a running start on its 1945 program at a two-day series of committee meetings held November 8-9 at the Hotel Pennsylvania, New York City. Primary purpose of the meetings was to complete organization details and to delineate the scope of committee work for the new Association year. L. E. Knowlton, of Providence, R. I., chairman of the Section, arranged the meetings and presided at the opening Managing Committee dinner, Wednesday, November 8.

The Committee Chairmen's dinner, with the exception of the Postwar Planning Co-operating Committee meeting which preceded it, inaugurated the separate committee meetings. It was attended by 30 officers, chairmen and vice-chairman of the Section, and guests from the Institute of Gas Technology. It opened with a tribute by Chairman Knowlton to the memory of the late Charles F. Turner, immediate past chairman of the Section, and a committee was appointed to arrange for a suitable memorial.

Additional light was thrown on the manner in which the Section's committees will continue to function under the reorganization of the Association establishing Manufactured Gas and Natural Gas Departments. Thereafter, the work and plans of the various committees were considered.

A report of progress from the Gas Chemist's Handbook Revision Committee was presented by its chairman, E. L. Sweeney, who stated that the committee's assignments will be completed next year. This will result in early printing of the work on gas analysis; tar, and tar oils; coal gas and water gas tar; enriching agents, and determination of combustion characteristics of gaseous fuels. Mr. Sweeney also reported that a successor to the Opperman Index is nearing completion and should be available soon.

Group at the Thursday general luncheon which was attended by all committee members and guests

E. L. Henderson, Houston; L. J. Eck, Minneapolis, vice-chairman, Technical Section; and Burgess Manchester, Omaha

Preside and Ja

Speakers' table at the general luncheon. Left to right: L. E. Knowlton, Providence, chairman, Technical Section; J French Robinson, Cleveland, president, American Gas Association; L. J. Eck, Minneapolis, Section vice-chairman; and George H. Smith, New York, director, Natural Gas Department and assistant managing director, A. G. A.

J. V. Postles, Philadelphia, chairman, Postwar Cooperating Committee; L. J. Willien, Chicago; S. P. Cobb, New York; and Vice-Chairman L. J. Eck, Minneapolis

Gas Production Committee meets—Samuel Green, Brooklyn, vice-chair.; R. Van Vliet, Staten Is., chair.; F. J. Pfluke, Rochester, chair., Tech. Advis. Com.; K. Fuery, New York

A general luncheon attended by all delegates to the organization meetings was held Thursday, November 9. Feature of this affair was the appearance of J French Robinson, president of the American Gas Association and president of The East Ohio Gas Company. Mr. Robinson gave a firsthand description of the tragic Cleveland fire and answered many questions covering technical phases of the accident. Committee members then returned to their individual meetings.

Following are the highlights of the committee meetings:

Postwar Planning Cooperating Committee
J. V. POSTLES, *Chairman*

The committee met at lunch on Wednesday, November 8, and had as guests Major Alexander Forward and P. T. Dashiell, chairman of the new Gas Production Research Committee. Progress reports were made by the various subcommittees.

T. L. Robey, chairman, Research Subcommittee, called on Director John I. Yellott, L. J. Willien and Benjamin Miller, of the Institute of Gas Technology, to report on the progress of the four subjects assigned them for study. These subjects, which are scheduled to be completed by the first of the year, are:

(1) Low investment production equipment.
(2) Utilization of natural gas condensates.
(3) Utilization of off-peak production capacity for other than gas production purposes.
(4) Search of the literature on Fischer-Tropsch and other hydrogenation processes.

When these reports are received, they will be turned over to the Gas Production Research Committee for consideration and further development if necessary.

The relation of the committee with the new Gas Production Research Committee was discussed, and it was announced that future requests for research on production problems, from the Postwar Planning Committee or from any other source, should go directly to the Gas Production Research Committee rather than to the Postwar Planning Cooperating Committee.

Chemical Committee
DR. C. W. WILSON, *Chairman*

The Chemical Committee organization meeting was held November 9 with fifteen members of the committee present. The chairman opened the meeting with a brief report of the accomplishments of the past year, followed by naming the chairmen who are to head up the various subcommittees during the year. He called attention to the fact that four members, representing the natural gas interests have been added to the committee.

Under the heading of "Unfinished Business" the progress of the revision of the former "Opperman Index" under a revised title, "Index to Materials of a Chemical Nature in American Gas Association Activities," was discussed by Luis Hilt, librarian of the American Gas Association. Mr. Hilt stated that the work would be completed very shortly and would be ready for presentation to the industry early in 1945.

The subject of coal research was discussed and Dr. H. H. Lowry was requested to submit a digest of the subject at the present time for study by the committee and, if looked upon favorably, the project will be presented to the Gas Production Research Committee for consideration during the coming year.

It was the opinion of the group that all Technical Section reports should appear in the annual Association Proceedings. If the papers are printed in the Proceedings they will be properly indexed for future reference by the industry.

The natural gas activities within the committee were then discussed at considerable length. It was decided that the members representing the natural gas interests should be given assignments on the various subcommittees so that they would become familiar with the workings of the General Committee and to be able to propose subjects pertaining to natural gas operations for subcommittee work.

Fifteen subjects for possible papers that may be prepared during the year were discussed and one paper on the "Chemical Utilization of Natural Gas" by Benjamin Miller of the Institute of Gas Technology was presented in completed form for consideration by the committee members.

Reports were obtained from each of the ten subcommittee chairmen.

The Planning and Programs Committee, the Luncheon Conference Committee and the Committee on Analyses and Tests have prepared outlines for work during the coming year.

Liaison members from the Chemical Committee were appointed to serve on the Postwar Planning, Production, Distribution, Gas Conditioning and Motor Vehicles Committees. Chemical Committee members have also been assigned to the A. S. T. M. D-3 and D-16 Committees.

Before the meeting adjourned it was decided to hold a Production and Chemical Conference, preferably for a 3-day period, during the third week of May. The place for the conference will be announced later.

Distribution Committee
T. H. KENDALL, *Chairman*

Substantial progress was made in completing the framework of the Distribution

President J French Robinson, Cleveland, and James M. Beall, New York, editor, A. G. A. MONTHLY

P. T. Dashiell, Philadelphia, chairman, Gas Production Research Committee; and J. I. Yellott, director, Institute of Gas Technology

Dr. C. W. Wilson, Baltimore, and W. R. Fraser, Detroit, chairman and vice-chairman respectively, presiding at the Chemical Committee meeting

J. V. Postles, Philadelphia, chairman, Technical Section Postwar Cooperating Committee; and Major Alexander Forward, New York, A. G. A. managing director

Luis Hilt, New York, librarian, American Gas Association, who is bringing up-to-date the Index to Material of a Chemical Nature

Committee's organization for the new Association year, and many suggestions for study were forthcoming at the November 9 meeting. Close attention was given to the scope of the various subcommittees' work and the following developments were reported:

H. B. Andersen, chairman, Subcommittee on Economics of Distribution Design for Domestic Load Building, stated that a preliminary draft of his committee report would be available in a few days. Considerable discussion took place on the Diversity Factor in Distribution Design for Domestic Load Building.

C. C. Jones, chairman, Subcommittee on Cast Iron Pipe Standards, reported that his interim report was already prepared and would be published in the proceedings of the Distribution Committee which is about to go to press. It will also be printed in pamphlet form at a nominal charge.

R. F. Hadley, chairman, Subcommittee on Pipe Coatings and Corrosion, declared that considerable data had been gathered by Dr. Kenneth Wight of Rutgers University and suggested that Dr. Wight be retained for another year to assemble this data and also to do more research on pipe coatings. This suggestion was unanimously accepted by the committee.

J. M. Pickford, chairman, Subcommittee on Work on Customers' Premises, was not able to attend but has selected the personnel of his committee and intends to continue the study of the serviceman and his problems; also, the need for simplification and standardization of appliance design.

A. W. Brashear, chairman, Subcommittee on Meters and Metering, was represented by L. K. Richey who reported that the committee intends to continue the work on standardization of meters.

L. K. Richey assumed the chairmanship of the Subcommittee on Safety and is also Technical Section representative of the American Gas Association Accident Prevention Committee representing the Distribution Committee.

E. L. Henderson has accepted the chairmanship of the Subcommittee on Construction and Maintenance and is in the process of forming his committee.

D. M. Workman has taken over the chairmanship of the Subcommittee on Distribution Developments. When his committee is formed it will keep in touch with new developments that pertain to distribution design.

Chicago was selected for the Distribution Conference to be held sometime next April if conditions permit. It was also decided that the conference would be held in conjunction with the Motor Vehicle Conference and, due to this, it would probably require three days.

Gas Conditioning Committee

H. D. LEHMAN, *Chairman*

In opening the Gas Conditioning Committee meeting, the chairman briefly outlined the three basic subjects the committee has handled since its inception. One of these subjects reached a successful conclusion when the A. G. A. Approval Requirements Committee on October 3, 1944, adopted the American Standard Listing Requirements for Gum Protective Devices for Use with Gas Appliances Operating on Manufactured Gas. These requirements make the use of gum protective devices mandatory at the standard date of January 1, 1946, on all domestic equipment except automatic water heaters, where up to another year was allowed if it proved necessary in the redesign of controls. Thus, the chairman reported, one of the most important operating problems facing the manufactured gas industry in recent years has been solved along lines recommended by the committee.

Dr. E. W. Guernsey, chairman of the Organic Sulfur Subcommittee, reviewed the results of the sulfur research program which were also the subject of a separate committee meeting reported below.

Other topics discussed at this meeting were (1) the dust problem in natural gas and (2) gas standards.

Organic Sulfur Subcommittee

DR. E. W. GUERNSEY, *Chairman*

The first discussion at this meeting concerned new developments of interest from the standpoint of the removal of organic sulfur from gas. It appears that most of the published or advertised material during the past year has to do with catalytic processes. Some work on chemical and on adsorption methods was mentioned.

Some of the members indicated that they expect to be able to put increased effort into studies for the determination of the composition of the organic sulfur in gases available to them. Some preliminary information on this subject was reported.

The chairman indicated that it would not be necessary to discuss in detail the plans for the immediate future for the continuation of the research at the Institute of Gas Technology, since the present activities are directed to carrying through the program agreed upon at previous meetings. For the information of the visitors, however, the considerations leading to the formulation of the program of research now under way was outlined in some detail. The present status of these studies was briefly indicated. At the request of the chairman, Dr. S. L. Martin of the Institute of Gas Technology staff, who is in direct charge of the research work at the Institute on organic sulfur, then gave an interesting account of the work now in progress on the various phases of the project.

A considerable part of the work is directed to bringing to a conclusion the rather extended study which has been made for the purpose of evaluating or developing suitable methods for the identification of the specific sulfur compounds constituting the organic sulfur in gas and determining their relative proportions. During the past year, however, a great deal of preliminary work has been done looking to the quantitative study of reactions of sulfur compounds with reagents of possible utility for the removal of those compounds. The study includes observations on reaction rates and chemical equilibria which largely determine conditions under which removal of the sulfur compounds may be expected. Most of this work thus far has been concerned with the reaction of carbon dioxide, carbon bisulfide and carbon oxysulfide with organic amines.

While it is true that the available staff is completely occupied at present in carrying through the program which has been planned, it seemed desirable to be looking ahead. Accordingly, suggestions were requested with regard to the directions in which future extension of the work should proceed when the completion of parts of the present program make efforts available. Some of the topics considered were:

1. Check the claims that certain catalysts, notably cobalt molybdate or molybdenum sulfide, are more effective for thiophene than other catalysts. Thiophene is relatively resistant to catalytic reduction or oxidation. At the temperatures which have been used in certain commercial operations, and employing a nickel catalyst, thiophene is unaffected.

2. Assemble available information concerning the thermodynamic properties of sulfur compounds at various temperatures. This should aid in appreciating the limitations of processes proposed and should be useful also in the study of the formation of sulfur compounds in gas-making processes.

3. Study experimentally the equilibrium relationship of sulfur compounds in an atmosphere of commercial gas at elevated temperatures, say 800° C. In certain German processes it is claimed that if gas is held at such a temperature for a few seconds a complete conversion of organic sulfur compounds to hydrogen sulfide results. This is understood to be the case even for thiophene. The gas is chilled to prevent the synthesis of organic sulfur compounds at lower temperatures. In the German process, it was stated that use was made of a recuperator of special design having such a high efficiency that the use of unusually high temperatures was economically feasible.

Appreciation of the attendance and of the continuing interest of the members and guests was expressed by the chairman.

Gas Production Committee

R. VAN VLIET, *Chairman*

A large part of the discussion at the Gas Production Committee meeting revolved around the plans to conduct a greatly enlarged postwar technical research program involving development of more efficient gas production methods. In this connection, P. T. Dashiell, chairman of the newly organized Gas Production Research Committee, explained the purposes of his organization and wherein its activities dovetailed with the Section's committee programs. It was brought out that F. J. Pfluke, last year's chairman of the Gas Production Committee, has been selected as chairman of a Technical Advisory Committee to assist Mr. Dashiell's committee.

Work of the Gas Production Committee

in cooperation with the Postwar Planning Cooperating Committee during the past year was reviewed by Mr. Pfluke. One of the immediate problems, it was brought out, is that of increasing the capacity of water gas sets. In this connection, it was decided to carry out further studies and at the same time to complete and publish as soon as possible the comprehensive and valuable report on this subject made by George R. Steere at the last Production and Chemical Conference.

Plans were made for the presentation of a number of timely papers at the annual Gas Production and Chemical Conference. It was agreed that it should be a three-day meeting and tentative time and place suggestions were made.

Particular attention was paid at the meeting to the organization of committees to cover various assigned fields. To date the following Gas Production committees have been organized:

Water Gas—J. Hawley Taussig, chairman
Carbonization and Coke—C. C. Russell, chairman
High B.t.u. Gas—G. T. Bentley, chairman
Use of Oxygen in Gas Manufacture—Dr. S. P. Burke, chairman
Survey of Gas, Coke and Byproduct-Making Properties of American Coals—J. S. Haug, chairman
Safety—C. Koons, chairman
Builders' Section—Carl Schlegel, chairman

Committee on Operation of Public Utility Motor Vehicles

S. G. PAGE, *Chairman*

In opening the meeting the chairman discussed in some detail the service which the committee has rendered in the past through keeping Association members advised of current developments in rationing and other control procedures and expressed his understanding of the appreciation with which this service was received and its value to operating companies.

He then discussed the tentative plan of the committee for its work in the ensuing year, mentioning the two Subcommittees now set up; namely, that on Standardization of Body Design and that on Driver Training and Safety. Plans were made for gathering the necessary drawings and photographs for the body standardization study and also for obtaining committee members' suggestions on the driver training and safety item.

The committee discussed at some length the organization of an E.E.I. Motor Vehicle Committee, which it is understood is now underway and considered the possibility of the coordination of the activities of the two committees.

It was felt that the information service should be continued and the chairman appointed C. Wood of the Virginia Electric Power Company as a clearing house for this sort of information and appointed W. A. McCutcheon of the Washington Gas Light Company, as a clearing house for information on operating problems.

It is felt worth while to advise member companies to exercise caution in considering the purchase of excess army vehicles, as those suitable for general highway purposes are in poor condition before the army is willing to dispose of them and special army type vehicles are unsuitable for general highway use.

Dog-eared for Technical Men

The following list of references to technical literature deemed of interest and value to members of the Technical Section, has been prepared by Luis Hilt, librarian of the American Gas Association. This is the fifth listing.

Calorimetry

Heating Value of Natural Gas: Determination of Total and Net Values with a Water-Flow Gas Calorimeter—A. J. W. Headlee & James L. Hall—Industrial & Engineering Chemistry, October 1944:953-5.

Complete Gasification, Hydrogenation of Coal, Methane Synthesis

Production of Gaseous Hydrocarbons by the Hydrogenation of Coal—F. J. Dent—Gas Times, October 14, 1944: Supplement 6 pages.

Pattern of Fuel Research, The—J. G. King—Gas Times, October 28, 1944:29-40. (Incl. References)—(A valuable paper.)

Corrosion

Soil-Corrosion Studies, 1941: Ferrous and Non-Ferrous Corrosion-Resistant Materials and Nonbituminous Coatings—Kirk H. Logan & Melvin Romanoff—U. S. Bur. of Stds. Journal of Research, September 1944:145 98 (Incl. References).

Gas Turbine

Potentialities, Limitations of the Combustion Gas Turbine—Glenn B. Warren—Part I—Electric World, October 28, 1944:83-5.

Oil Synthesis, Fischer-Tropsch Process, Etc.

Science of Coal to Oil Conversion—W. D. Spencer—Part 6: Summary and General Conclusions—Petroleum (London), October 1944:184-6 (Incl. Bibliog.)

Fuel Pitch Wrinkle Wins $125 Award

ERNEST LELAND, foreman, Harrison Gas Works, Public Service Electric and Gas Co., received an award of $125, October 23, for his suggestion resulting in increased production of fuel pitch at the gas works.

Three stills at Harrison are used to manufacture fuel pitch from the tar produced at the gas works. When ready to be discharged from the stills, the pitch is liquid at a temperature of about 800° F., when it is run through the pipe line into the pitch bay, where it solidifies into a mass resembling unmined coal. When the making of pitch was first started, it was necessary to break up this mass manually and with pneumatic concrete breakers, after which a locomotive crane's clam shell bucket could handle the material quickly.

Mr. Leland suggested putting river water into the bay and then dropping the molten pitch into the water. A brittle, porous mass resulted which could be quickly dug out by the crane only, thereby eliminating the slower hand-labor method.

As it was necessary to increase production over the original estimate, Mr. Leland's suggestion made it possible to do so with the existing equipment in the area where ground space was already limited. Accordingly, the $125 suggestion award was presented him, in addition to the $25 previously granted.

Synthetic Fuel Research

NOW beginning an expanded five-year synthetic liquid fuels program at the direction of Congress, the Bureau of Mines Nov. 11 released a review of its research during the past eight years in making gasoline and oil from coal and lignite—potential sources of motor fuels and lubricants for the day when natural petroleum reserves no longer can fill the growing demand.

Although conducted on a small scale, this preliminary research has provided the basic technical knowledge needed to launch the present intensive five-year program of advanced research and development under which synthetic fuel laboratories and demonstration plants will be built and operated by the Bureau to "iron out the kinks" for private industry.

Prepared by Dr. Arno C. Fieldner, chief of the Bureau's Fuels and Explosives Branch, Dr. Henry H. Storch, supervising chemist, and Dr. Lester L. Hirst, physical chemist, the review explains in detail the experiments in hydrogenation and liquefaction conducted at the Bureau's laboratory-scale plant at Pittsburgh, a continuous unit capable of hydrogenating 100 pounds of coal in 24 hours. It also presents chemical-process information obtained in a large number of batch-hydrogenation tests conducted in small steed autoclaves or bombs.

An unabridged copy of the publication,

Technical Paper 666, "Bureau of Mines Research on the Hydrogenation and Liquefaction of Coal and Lignite," may be obtained from the *Superintendent of Documents,* Government Printing Office, Washington 25, D. C., for *15* cents. It is not for sale by the Bureau of Mines.

Fischer-Tropsch Paper Features Meeting

A PAPER on "Fischer-Tropsch Synthesis and the Gas Industry" by Dr. V. I. Komarewsky, research professor of chemistry at the Illinois Institute of Technology, and Dr. C. H. Riesz, associate chemist at the Institute of Gas Technology, was delivered by Dr. Komarewsky at the meeting in Chicago of the Western Society of Engineers on November 13.

"Since the start of World War 2," Dr. Komarewsky said, "two new developments have been announced, naphthene synthesis and isosynthesis. The second process is of special importance since it implies that high-octane aviation gasoline can be produced. A deficiency of the process up to the present has been the fact that only straight-chain paraffin hydrocarbons are formed from which high-octane gasoline could be produced only by means of additional processes.

"A study of previous work has led to a theory of the mechanism of the reaction. By means of the theory, the choice of catalyst and reaction conditions has been narrowed so that it may become possible to direct the reaction toward the production of desired products, e.g., 100-octane aviation gasoline.

"The interest of the gas industry in the Fischer-Tropsch process is twofold. First, both natural gas and manufactured gas may be processed to obtain gas suitable for the synthesis and as such a new use for gas may be developed. Second, the largest demand for gas occurs during the winter months and, therefore, standby water gas plants are idle in manufactured gas plants during the summer months whereas natural gas is sold at lower price to industrial consumers to maintain a uniform load on pipelines.

"Thus, if the present process can be improved in order to reduce production costs or if the reaction can be directed to produce more valuable products the Fischer-Tropsch process may become economically feasible for use in the gas industry. The Institute of Gas Technology has undertaken a program of basic research which includes these objectives."

Cleaning and Repairing Flatbush Gas Holder

By ROBERT I. WARNECKE

Superintendent's Assistant, Holder Distribution

EARLY on the morning of January 4 of this year, during a sleet storm accompanied by high winds, one of two 5,000,000 cubic foot gas holders at our Flatbush Station failed to function properly while gas was being admitted for storage and distribution. The extent of the failure and the cause were not definitely known at the time. Subsequent examination by the Bartlett Hayward Company and our own people established certain facts which prompted us to limit its operation for the remainder of the winter season.

Gas holder inspection, operation, and maintenance are largely a matter of routine. In compliance with rules and recommendations of the Public Service Commission pertaining to the internal inspection of gas holders, it was planned to make an inspection of this fuel bin in 1942. However. this program was interrupted because of the war.

There are four principle phases in the major repair of a water sealed gas holder:

Phase I—Severing all gas connections. Purging.

Phase II—Emptying water from the tank. Removing sediment from tank bottom.

Phase III—Inspection and repairs to interior of holder.

Phase IV—Refilling tank with water, purging, and connecting gas to holder.

In Phase I, the work was completed according to standard practice without unusual events.

Before removing the water from the tank, we entered the holder through one of the 30″ inlet mains and from rowboats we were able to observe the operation of the holder from the interior as it was raised with air supplied from a blower. We found the fourth cup damaged at two places and the grip of the fifth section badly bent. The shafts of a number of internal cup rollers had been dislodged, and these rollers no longer served to guide properly the travel of the section. Undoubtedly this caused the damage to the cup. The rollers were reassembled from the boats and an internal inspection was made by a representative of the Bartlett Hayward Company.

In Phase II, the disposal of the 8,500,000 gallons of water in the tank was a problem of some concern. This holder is located in a residential section of Flatbush and is only a half block from the Kings County Hospital. It was necessary to discharge the water into city sewer mains which serve as sanitary sewers for thousands of our customers' homes along the line. The water in the tank contained considerable amounts of emulsified drip oils and dissolved gas. We had reason to believe that this water if discharged directly into the sewer without treatment would create a nuisance to many of our customers and might be costly to the company.

With the able assistance of our Laboratory we experimented with a small pilot plant and finally built a water treating plant which consisted primarily of a coke filter, aerating tower, and provision for chemical treatment.

The water was first syphoned out of the tank into a coke filter which consisted of a steel tank, 12 feet in diameter, containing about 13 tons of range size coke. From the filter, the water was pumped, meanwhile being preheated, into the top of the aerator, which was a wooden structure having a series of wooden baffles which served to break up the stream of water. A blower in the bottom of the tower blew air and steam, which was introduced at the bottom, in counterflow direction to the water. The gassy vapors were discharged through a 100 foot canvas stack attached to the top of the tower. The water flowed from the tower in a wooden flume to a sewer catch basin.

Sodium hypochlorite, a strong germicidal agent, was added in small quantities at the head of the flume and was well mixed with the water as it flowed to the catch basin. The chemical treatment was coordinated with the flow of sewage. During periods of heavy flow less chemical was added, and during the night and early morning the amount was increased.

Treatment Effective

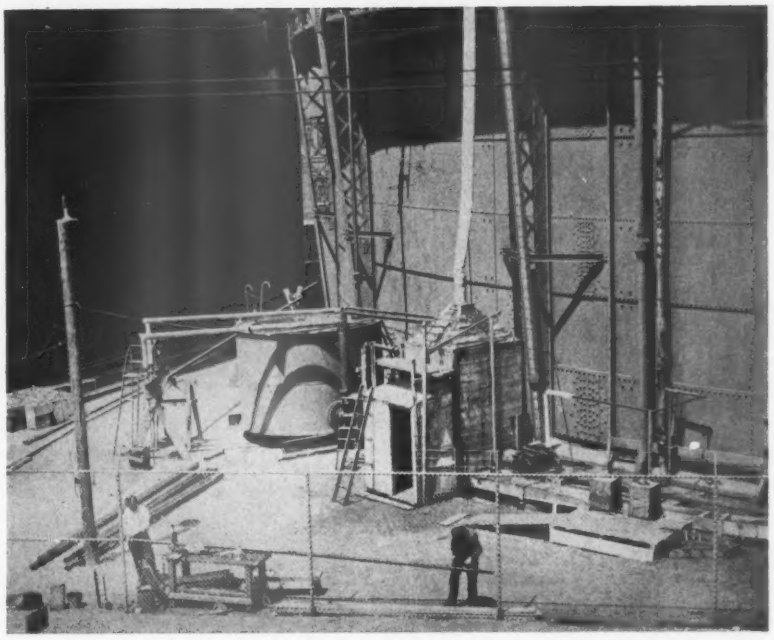
This method of treatment proved effective. It was originally estimated that with chemical treatment alone, 2,500 gallons of sodium hypochlorite would be needed per million gallons of water. Actually we used only 180 gallons per million. This did represent a saving, but of far more importance to us was the fact that as far as I know, the company received only one complaint of odor that might possibly have been traced to the sewer main used.

After the removal of the clear water there remained in the tank approximately 83,000 gallons of emulsified drip oil and 625 tons of sludge.

The drip oil was for the most part probably an accumulation of deposit from our district main drips which was dumped into the tank of this holder some years ago. The coke was removed from the coke filter tank and the drip oil pumped into it. Some heavy sludge settled to the bottom and the oil was pumped into our drip trucks and hauled to Citizens Works for disposal in the separators.

The remaining 625 tons of sludge was hoisted from the tank bottom and hauled away to the city dumps. This work was done by a contractor in 16 days.

With tank bottom cleared we entered Phase III. A holder is essentially a rather simple structure, but because of its size it is constructed of many component parts all of which have rivets, bolts or welded joints. This particular holder was constructed with approximately 750,000 rivets and thousands of nuts and bolts. A number



A view of the equipment used by The Brooklyn Union Gas Company to remove mulsified drip oils and dissolved gas from the water in the holder tank before letting the water flow into the city's sanitary sewers. At left is steel tank containing coke which served as a filter. Wood structure at right of tank is aerator described in Mr. Warnecke's article. The flume, with sodium hypochlorite drips, is visible in right foreground

of rivets and bolts were found to be weakened largely because of corrosion. Several thousand rivets, bolts and nuts were replaced and rivet heads which were badly corroded were built up by arc welding.

There were many other seemingly small items of repairs which were done but each was very important to insure safe and proper operation of the holder. Most of the repairs were between or under the landed sections of the holder and the confined working space made the task both tedious and time consuming. Repairs to the damaged sheets and much of the welding was done by an outside contractor.

Wooden Staircase Installed

On the suggestion of one of our employees, a wooden staircase was installed from the crown of the holder to the tank bottom. This staircase, which can be removed and used again, replaced the 50 foot straight ladder which customarily was used to reach the bottom of a tank. This innovation proved to be a great convenience to both workmen and supervisors who formerly were obliged to descend the straight ladder in a safety harness, one at a time. One slip on the ladder without a safety belt might mean a sheer drop of 50 feet to the steel bottom of the tank. Furthermore, it is estimated that approximately 1,000 man hours were saved by its use.

Incidentally—and this is a credit to the men who worked on this job—the cleaning of the holder has been completed without a single disabling injury.

We are now in Phase IV. It was necessary for us to obtain approximately 8½ million gallons of water to refill the tank. This amounts to about ⅓ of the daily output of the New York Water Service Corporation which serves this area.

Water normally supplied from street hydrants at this location would take approximately three weeks' time to fill the tank. In order to save time and insure a continuous supply, a six-inch line was run directly from one of their wells located across the street and water was discharged directly into the holder tank at a rate of approximately 2,000,000 gallons per day. This operation was completed in about four days' time.

After rewatering, the boats will be launched again and the internal rollers will be adjusted as the holder is operated with air.

Final purging and connecting the gas mains will complete the job. We anticipate the holder will be back in service about November 1.

Our fuel bins are outstanding pieces of equipment in many ways. There are no two holders in our system which are identical in construction and each has its own peculiarities which our people have come to know. Fortunately, our holders are all dependable and faithful in their performance over long years of very essential service to our customers.

Statement of the Ownership, Management, Circulation, Etc., Required By the Acts of Congress of August 24, 1912, and March 3, 1933

Of American Gas Association Monthly published monthly, except July-Aug. which is combined, at Brattleboro, Vermont for October 1, 1944.

State of New York, County of New York, ss.

Before me, a Notary Public in and for the State and county aforesaid, personally appeared James M. Beall, who, having been duly sworn according to law, deposes and says that he is the Editor of the American Gas Association Monthly and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, American Gas Association, Inc., 420 Lexington Ave., New York 17, N. Y.; Editor, James M. Beall, 420 Lexington Ave., New York, N. Y.; Managing Editor, None; Business Managers, None.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.)

American Gas Association, Inc., 420 Lexington Avenue, New York 17, N. Y.; President, Ernest R. Acker; Vice-President, J French Robinson; Treasurer, J. L. Llewellyn; Managing Director, Alexander Forward (all of 420 Lexington Ave., New York 17, N. Y.).

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the twelve months preceding the date shown above is . (This information is required from daily publications only.)

JAMES M. BEALL, Editor.

Sworn to and subscribed before me this 22nd day of September, 1944.

LAWRENCE P. BROWN.

(Seal)

Notary Public, Queens Co. No. 226, Reg. No. 110-B-5
Cert. filed in N. Y. Co. No. 135, Reg. No. 89-B-5
Commission expires March 30, 1945

New Method for Emergency Gas Shut-off

DEMONSTRATIONS of a newly patented method of emergency gas shut-off for broken or ruptured low-pressure gas mains or services were recently staged by the Delaware Division of the Philadelphia Electric Company. The new method utilizes a material known as Slug-A-Fome. It is a powder which, when mixed with water and run into a gas main, forms a viscous material and builds up an internal pressure.

Slug-A-Fome in the main will normally stop the flow of gas for at least an hour. In the event of a job requiring more than an hour, additional injections may be made; each injection giving at least a time life equal to the original charge.

The equipment consisted of approximately eighty feet of 6-inch steel pipe and eighty feet of 12-inch steel pipe, plugged at one end and open to the atmosphere at the other end. Gas was supplied near the closed end from two 2-inch "pounds to inches" house regulators. Forty feet of 1¼-inch pipe was tapped into each pipe to represent an ordinary house service. The 1¼-inch service pipe to the 6-inch main was connected into about four feet of glass piping which was a part of the 6-inch main used. This was to give a good view of what actually happens inside the main when Slug-A Fome was injected.

Light Gray Powder Used

The gas supply was turned on at the 6-inch main and was lighted at the open end. The Slug-A-Fome, a light gray powder, was dumped into a hopper of the applicator, which is connected to the end of the forty-foot service, and the water was turned on.

The Slug-A-Fome and water were carried through the forty feet of service and into the glass portion of the main when a mass of small bubbles was formed which grew rapidly and pushed each way from the service. In approximately thirteen seconds the main was completely closed off.

The plug formed first on the open end side of the point of entrance and then pushed back towards the closed end or source of supply, and created a pressure of approximately twenty inches of water column before being relieved at a vent.

This plug was made against a pressure of six inches of water column and held the gas tight for over an hour when additional Slug-A-Fome was added to continue the seal. The plug of Slug-A-Fome was completely washed out in a very few minutes by an application of water to the main through the applicator. Virtually no residue remained.

The same demonstration was then repeated using a 12-inch pipe in place of the 6-inch pipe, and the plug was formed and the gas shut off in one and one-half minutes.

During both demonstrations the gas pressure was six inches of water column. Gas was supplied at the rate of 6000 cubic feet an hour. Water pressure required was approximately thirty pounds a square inch. Quantity of water required was thirty gallons a minute or one-half gallon a second. Twelve pounds of Slug-A-Fome powder was used to stop off the 6-inch main, and seventy pounds of powder was used to stop off the 12-inch main. Time required to stop off the 6-inch main was thirteen seconds; the 12-inch main, one and one-half minutes.

A special demonstration was given by the employees of the Delaware Division Gas Department. It was attended by the Main and Service, and Fitting Department employees, and all others in the division who were interested.

This method of shutting off gas is effective and can be used to advantage in an emergency. The set-up can be made in a cellar adjoining the main break; the gas service being used to carry the Slug-A-Fome to the main, and the water service to supply the necessary water.

The easy method of destroying the slug itself after the emergency is a decided improvement over other methods in use.

—*Current News*, Philadelphia Electric Company System

FOOD SERVICE PROBLEMS

(Continued from page 529)

equipment. It is this latter point that I wish to stress. While I believe that we have gone a long way from the practice that in the past consisted of specifying the amount of range footage with a steel tape, limited only by the size of the customer's kitchen; still in my opinion, even today, we do not require that gas food service equipment be sufficiently loaded so as to permit maximum fuel efficiency.

I know of no better way to encourage the use of electric heavy duty equipment in commercial kitchens, than to continue the practice of specifying an excess amount of gas equipment with its corresponding poor loading and low efficiency; while our electric competitors specify a minimum of equipment, with heavy loading and high efficiency. We have been content too long to accept consumptions of 5, 10 and even 20 cubic feet of gas per meal as an expected gas consumption for commercial cooking.

There is lacking in our industry a definite yardstick to use, in determining the amount of equipment actually needed to do a given commercial cooking job. I believe it entirely practical to develop a yardstick that would establish the proper amount of gas equipment necessary for any type of food service customer, based on accepted standards of maximum loading and efficient operation. To do so, it would be necessary to convert all food service equipment to some common denominator such as a unit representing an "equivalent range section." Then, for a given type and class of customer, a minimum loading of so many meals per day per equivalent range section would be required.

Once the number of "equivalent range sections" was determined for any food service customer, by the anticipated or known patronage, then that number of units could be broken down into diversified appliances best suited to the customer's needs.

Such a yardstick would give the hotel and restaurant man a definite argument to present to the customer, to the kitchen equipment house and to the manufacturer, in defense of his position that only so much gas equipment is required. This tightening up on the amount of commercial gas equipment installed would go a long way towards reducing the effectiveness of our competition.

Conclusion

It can be said in conclusion that we have complete acceptance in the field of good service, that we have established a position in this field that is the envy of any competing service, that dealer assistance is available to us for our asking, that gas equipment basically is sound and will be subject to much improvement in the postwar period. In fact, we have everything needed for a successful performance in this field, provided that we have the will to act, the energy and enthusiasm to carry through a determined program, the ability to coordinate our efforts and to plan a course of action, both as an industry and as an individual. This is the challenge that the postwar era presents to us—let us make certain that we measure up to it.

Personnel Service

POSITIONS OPEN

Engineer familiar with AGA Testing Procedures for Research Laboratory. Permanent position with Manufacturer of Heating Equipment. State age, experience and salary desired. **0399.**

The man we seek is an aggressive individual with a sound background in all phases of operation, who is capable of assuming **active management** of a small New England water gas property. This man can step in and put into effect certain economies that have already been carefully evaluated for their immediate possibilities. The company's and the community's post-war potentialities have also been carefully studied. Here is a splendid opportunity for the right man, and to him we are prepared to offer an attractive salary and profit sharing bonus. In your first letter please state as fully as possible all your qualifications. Replies will be treated in strictest confidence. **0403.**

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Engineering graduate, fifteen years of broad experience in design, construction and operation of gas plants and distribution systems desires connection as **superintendent** or **manager** of medium size property. Available shortly after the first of the year (37). **1485.**

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